OCCUPATIONAL INJURIES AND DISEASES IN ALBERTA

1999 SUMMARY

Lost-Time Claims
And
Claim Rates

Alberta
HUMAN RESOURCES
AND EMPLOYMENT

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Highlights

In 1999

- There were 35,440 workplace injuries and diseases serious enough to miss at least one day of work. This translates to one disabling occupational injury or disease every 15 minutes around the clock.
- The lost-time claim rate was 3.2 per 100 person-years worked. Since 1991 the rate has either decreased or remained the same. The rate in 1999 is the lowest rate ever recorded in the province.
- The lost-time claim rate either remained the same or decreased in all sectors except the Business, Personal and Professional Services sector where it rose by 5%.
- The industry sectors with higher than average lost-time claim rates (all above 3.2) continued to be Manufacturing and Processing; Construction and Construction Trade services; Transportation, Communication and Utilities; and Agriculture and Forestry.
- Workers who had worked for their current employer for less than six months continued to be the most likely to lose time from work due to work-related injury and disease.
- Truck drivers experienced the largest number of injuries or disease with time away from work.
- Sprains, strains and tears continued to be the most common type of lost-time injury with the back being the most common injured body part.
- The median[1] workdays lost due to work-related injury and disease was 9 days.
- 114 occupational fatalities were accepted by the WCB. Of these, about 33% were incidents of occupational disease, 29% were motor vehicle incidents and 32% were workplace incidents.

Between the years 1991 and 1999,

- There have been about 97 fatalities for every million person-years worked.
- Fatality rates continued to be higher than average in Agriculture and Forestry; Construction and Construction Trade Services; Transportation, Communication and Utilities; and Mining and Petroleum Development.

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[1] A median workday lost designates the point at which half of the total cases involved more days and half involved fewer days.

1. Introduction

Mission of Alberta Human Resources and Employment

The Alberta Government has set a goal to ensure that 'Alberta will have a fair and safe work environment '. One of the missions of Alberta Human Resources and Employment, in accordance with this goal, is to work in partnership to foster safe, fair, productive and innovative workplaces. To this end, Alberta Human Resources and Employment recognises that monitoring workplace health and safety in Alberta will help to ensure primary concerns are actively managed and resources directed where most needed.

1999 Lost-Time Claim Summary

In order to provide a comprehensive picture of workplace health and safety, Alberta Human Resources and Employment prepares an annual summary of occupational injury and illness which results in time lost from work. This report includes:

- A descriptive summary of programs and initiatives undertaken by Alberta Human Resources and Employment in pursuit of its mission and goals.
- An estimation of the risk of injury or illness (the lost-time claim rate) in addition to descriptive information regarding the incidents and injured workers.
- Lost-time claim rates at the provincial, major industry sector and industry sub-sector level.
- Analysis of the lost-time injury and illness claims to provide a broader context for the lost-time injury and illness rate.
- Occupational fatalities accepted by the Workers Compensation Board (WCB) for compensation and fatality rates for the major industry sectors.

While this report focuses on 1999 data, corresponding information for 1998 is also provided for comparison and where possible historical data is also presented.

It is important to note that about two-thirds of all employed in Alberta are represented in this report. Most workers are included, but notable exceptions are some agriculture, financial services and federally regulated workers. The information presented in this report is based on incidents of injury or illness that occurred during 1999 and were accepted as lost-time incidents by Alberta Workers Compensation Board (WCB) as of March 31, 2000. It does not show statistics on claims that were accepted for medical expense but involved on time loss from work. The data was used to generate frequencies, percentages and injury and illness rate.

Terms, definitions, and formulas used throughout this report are described in Appendix A. Industry codes are presented in Appendix B and selected graphs in Appendix C.

2. Workplace Health and Safety Business Plan Initiatives

Workplace Health and Safety continued to ensure that compliance and inspection programs focused on specific industry sectors and employers in 1999. These programs focused on

- Significant uncontrolled hazards
- Poor occupational health and safety performance based on lost time claim rate, duration rates and WCB Poor Performance Surcharges

In addition, officers investigate workplace fatalities, serious incidents and complaints regarding occupational health and safety issues.

Workplace Health and Safety's Partnerships Program promotes the development of effective health and safety systems within companies. Alberta Human Resources and Employment recent efforts have involved working with stakeholders in Alberta to enhance standards that would provide improved quality for the certification process of employers. A new audit standard has been approved. All audit instruments used in the Partnerships Program must be amended to meet this new standard by the end of 2001. Roles have been clarified within the program and the distinction of "Certifying Partner" has been introduced to identify those partners who carry out quality assurance for the issuance of Certificates of Recognition. New audit review standards will also be implemented in 2001.

Alberta Human Resources and Employment fosters the identification and management of hazards through the development and provision of quality information. This is accomplished through participation in the development of Canadian Standard Association (CSA) Standards, Codes of Practice, Recommended Practices, Safe Operating Procedures, and Standards and Safety Manuals incorporating hazard identification and control as a strategy to reduce worker injury and illness. Alberta Human Resources and Employment continued to develop information and awareness campaigns to assist employers in the identification and control of hazards, expand relationships with groups such as industry safety associations and include information for clients on the identification and control of hazards through its Internet site.

Alberta Human Resources and Employment is providing leadership and resources to conduct a comprehensive regulatory review and the development of interpretive guidelines and enforcement standards. This review process includes consultation with industry and labour before drafting regulations. The process will result in the right balance between regulations which focus on objectives and simplicity, and regulations which to provide enough detail to be useful and enforceable. All regulations will be consolidated into a new Occupational Health and Safety Regulation by December 31, 2000.

Alberta Human Resources and Employment will continue to promote and address occupational health and safety as an important issue in the workplace. The results will be healthier and safer workplaces, an improved quality of life and more productive and competitive businesses in Alberta.

3. Alberta Industry Total

A total of 35,440 injuries and illnesses that required recuperation away from work beyond the day of the incident were reported in workplaces during 1999. This number represents about 1.3% reduction from that of 1998 and translates into one disabling occupational injury or illness about every 15 minutes around the clock. In contrast, person-years (an estimate of employment) rose by only 0.1% to 1,103,893 from 1,103,318 in 1998 (see Table 3.1).

The 1999 lost-time claim rate was 3.2 per 100 person-years worked, a decrease of about 3% from that of 1998 (see Table 3.1). This rate has been calculated from lost-time claims data as of March 31, 2000. This rate always underestimates the risk of occupational injury and disease since some lost-time claims that occurred in 1999 were not administered by March 31, 2000. The lost-time claim rate has declined or remained the same in each year since 1991. The rate of 3.2 per 100 person-years worked is the lowest rate ever recorded in the province and translates to about 16 injuries and illnesses per million hours worked. Continued partnership between government, business, health and safety organizations, and organized labour to promote health and safety practices have contributed to the continued decline in the lost-time claim rate.

In 1999, the lost-time claim rate for small business (those with fewer than 40 full-time employees) was about the same as that of the provincial rate. However, their rate was about 7% higher that those with more than 40 full-time employees. (see Table 3.2). This higher rate may be explained by the fact that many of these small business are concentrated in high hazard industries and/or do not have the resources necessary to deal with all aspects of health and safety at their workplace.

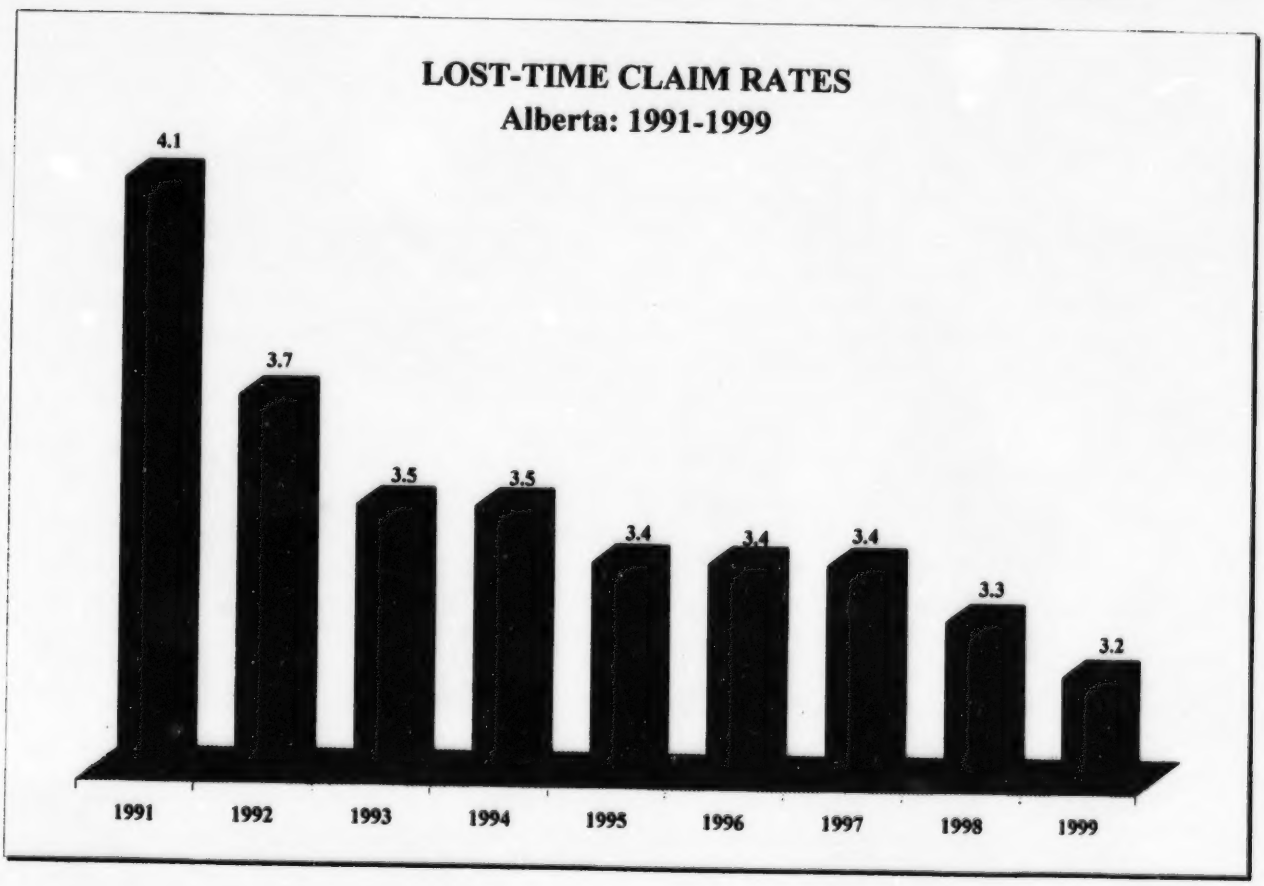
In 1999, young workers (15-24 years) injury rate dropped slightly from 2.9 per 100 employed in 1998 to 2.8. Regrettably, young workers still get hurt on the job at a high rate (see Table 4.1A). The situation is particularly more alarming for young male workers who are 85% more likely to be injured than other workers. The industries with the most lost-time claims among young workers were Manufacturing and Processing; Retail and Wholesale Trade; and Construction. These three industry sectors accounted for over 65% of lost-time claims among young workers.

Estimates of injury and illness severity are made by using information on the number of days away from work to recuperate from each disabling condition. Two basic measures of severity are the median days away from work and the duration rate. In Alberta, the median[2] workdays lost was nine days, an increase of about 13% from that of 1998. The duration rate– the number of workdays lost per 100 person-years worked- indicates in part, the economic impact of occupational injury and disease. In Alberta, the duration rate of 95 days per 100 person-years worked in 1999 was about 2% higher than in 1998. (see Table 3.1). Duration rates reported here are not normally recommended as reliable indicators of full economic costs since most of the disability days are not updated after March 31 of the year following the year of the claim.

[2] A median workday lost designates the point at which half of the total cases involved more days and half involved fewer days.

Table 3.1
Injury and Disease Statistics[3]
Alberta

	1998	1999	Percentage Change
Estimated Person-Years	1,103,318	1,103,893	0.1%
Lost-Time Claims	35,926	35,440	-1.4%
Lost-Time Claim Rate	3.3	3.2	-3.0%
Median Workdays Lost	8	9	12.5%
Duration Rate	93	95	2.1%

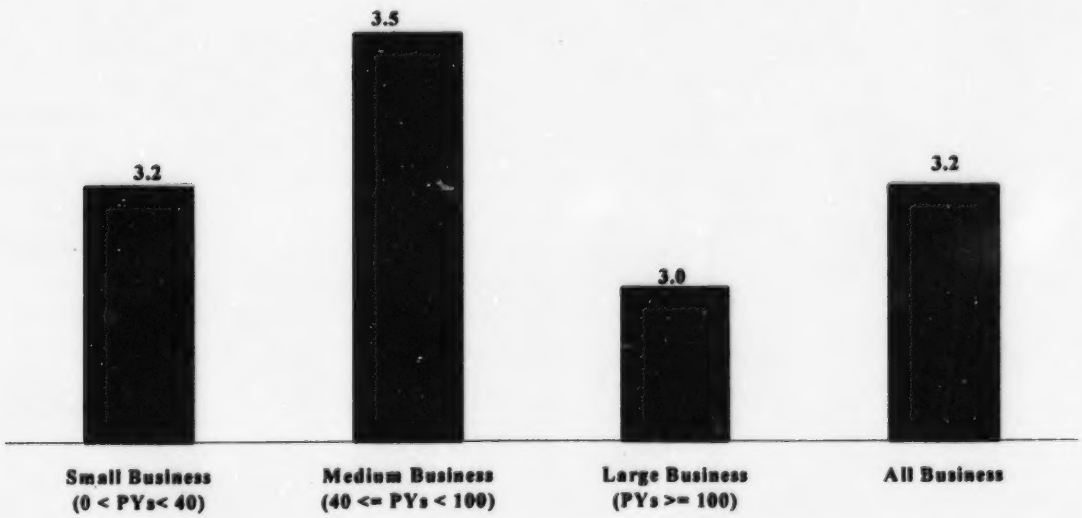


3 Estimated person-years are calculated from wage and payroll data submitted by employers to the WCB. Estimated person-years for employers who directly bear the cost of their workers' claim are excluded. Lost-time claims for these employers are also excluded unless the WCB has incurred administration or enhanced disability cost.

Table 3.2
Lost-Time Claim Rate By Size[4] of Employer
Alberta: 1999

Size of Employer	# of Accounts	Lost-Time Claims	Estimated Person-Years	Lost-Time Claim Rate
0 to < 10 person-years	87,425	5,229	168,240	3.1
10 to < 20 person-years	6,453	2,928	90,382	3.2
20 to < 40 person-years	3,830	3,626	106,143	3.4
40 to < 100 person-years	2,459	5,392	152,187	3.5
100 or more person-years	1,552	17,542	586,942	3.0
Invalid[5]	5,695	723	0	N/A
Total	107,414	35,440	1,103,894	3.2

Lost-Time Claim Rate By Size of Employer
Alberta: 1999



4 Size is measured in terms of estimated person-years. One person-year is equivalent to one full- time worker working for one year. Person-years are estimated from payroll information submitted to the WCB by employers.

5 These are employers with no payroll information or with estimated person-years equal to zero.

4. Injury and Disease Analysis

In addition to considering lost-time claim rates at the provincial, sector and sub-sector level, a more detailed analysis of the claims themselves may provide a better understanding of potential hazards in the workplace. This understanding can then lead to more focussed health and safety programs.

In this section, characteristics of the injured workers whose claims resulted in wage compensation as well as specific details of the occupational injuries and diseases will be examined[6], including:

- physical characteristics of the injury or disease;
- part of body injured;
- source of the injury or disease;
- type of injury or disease event; and
- duration of disability.

While the focus is at the provincial level, some sector information will be highlighted. Throughout this section, the classifications used are based on the Canadian Standards Association (CSA) standards for categorizing occupational injury and disease information[7].

4.1 Injured Worker Characteristics

The age, gender, job tenure and occupation of the injured worker are of interest when examining workplace injuries and disease rates. This information can help determine if workplace health and safety programs need to be targeted to specific groups. For example, younger workers may require a different approach than their older counterparts. Similarly, workers new to a job are likely to have different workplace health and safety needs than those who have worked at a job for a longer period of time.

Age

The majority of lost-time claims (56%) involved workers between the ages of 25-44 years (see Table 4.1A). Some 21% of claimants were between the ages 15- 24 years (young workers), and another 21% were to workers aged 45 years and above. Less than 1% of the claimants did not provide information on their age. A similar distribution was observed in 1998.
Although most of the claims (56%) involved workers in the 25-44 year group, further analysis showed that the rate[8] of injury declined with age. The rate of injury declined from a high of 2.8 per 100 workers for young workers (15-24 years) to a low of 1.7 per 100 workers aged 45 years

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[6] More detailed analysis of the pattern among these characteristics and the lost-time claims from 1999 is available.

[7] National standards for categorizing injury and disease and comparable information of other province can be found in the CSA Z795 standard.

[8] The rate of injury is calculated as the ratio of the number of lost-time claims in a category to the total number of persons employed in that category. The total number of persons employed is obtain from Labour Force Survey (LFS). Since the numerator does not originate from the same source as the denominator, readers are advised that the risk of injury as stated can at best be used only as a comparative measure.

and above. (see Table 4.1A). One explanation for this difference among age groups is that young workers often perform more strenuous work, and are more frequently exposed to more hazardous work situations. In addition, older workers are simply injured less frequently perhaps due to their greater levels of experience.

Although workers age 45 and above are less likely than young workers to be injured seriously enough to lose work-time, when they are injured they require more time to recover before returning to work. The duration of absence from work due to workplace injury or disease double from a median of 6 days for young workers to a 12-day median for those 45 years and above. The median days away from work for the 25-44 years group was 9 days. Moreover, about 32% of injuries and diseases to workers aged 45 and above resulted in 31 or more days away from work due to injury or disease as compared to 17% for young workers. Factors that may contribute to longer recuperation periods for workers 45 years and above may include the fact that they sustain especially disabling conditions, such as broken bones more often than young workers do.

Several sectors were noticeably different from the provincial distribution of lost-time claims by the age of the claimant. While at the provincial level, about 21% of all injured workers were young workers (15-24 years), only about 9% were young workers in the Public Administration, Education and Health Services sector. Also about 33% of injured workers were 45 years and above in Public Administration, Education and Health Services sector as compared to 23% at the provincial level.

Table 4.1A
Injuries and Injury Rate[9] by Age of Injured Worker, Alberta

Age	1998		1999	
	N (%)	Injury Rate per 100 Workers	N (%)	Injury Rate per 100 Workers
15 - 19 Years	2,281(6.3)	2.2	2,134(6.0)	2.0
20 - 24 Years	5,341(14.9)	3.4	5,315(15.0)	3.3
25 - 34 Years	10,235(28.5)	2.8	9,798(27.6)	2.7
35 - 44 Years	10,234(28.5)	2.3	10,030(28.3)	2.2
45 - 54 Years	5,510(15.3)	1.9	5,720(16.1)	1.8
55+ Years	2,257(6.3)	1.5	2,374(6.7)	1.5
Unspecified	68(0.2)	N/A	69(0.2)	N/A

[9] The rate of injury is calculated as the ratio of the number of lost-time claims in a category to the total number of person s employed in that category. The total number of employed persons is obtained from the Labour Force Survey. Since the numerator does not originate from the same source as the denominator, readers are advised that the rate of injury as stated can at best be used only as a comparative measure.

Gender

In 1999, male workers accounted for seven out of ten lost-time claims (see Table 4.1B). A similar pattern was observed in 1998 and may be explained in part by the fact that men generally comprise a higher proportion of workers in higher hazard industry sectors. The rate[10] of injury was more than twice higher for males than for females (see Table 4.1B)

Males accounted for the majority of the lost-time claims in all sectors except for the Public Administration, Education and Health Services, and Business, Personal and Professional Services sectors, where between 55% and 61% of total claimants were female. This pattern may be explained by the fact that these two sectors include many occupations such as nursing and other health-related occupations traditionally held by females.

Table 4.1B
Injuries and Injury Rate by Gender of Injured Worker
Alberta

	1998		1999	
Gender	**N (%)**	**Injury Rate per 100 Workers**	**N (%)**	**Injury Rate per 100 Workers**
Males	25,938 (72.2)	3.1	24,895 (70.2)	2.9
Females	9,263 (25.8)	1.4	9,812 (27.7)	1.4
Unspecified	725 (2.0)	N/A	733 (2.1)	N/A

Job Tenure

Job tenure measures the length of time that the injured worker had been employed by his/her current employer before the injury or disease. It gives an indication of the amount of job experience of the injured worker.

The 1999 distribution of lost-time claims according to job tenure indicates that, over four out of ten workers with lost-time claims had worked at their job for a year or more, suggesting that many experienced workers incur lost work-time injuries or disease (see Table 4.1C). As with age and gender, this distribution has been relatively constant over the years.

It should be noted, however, that for about 22% of all claimants, job tenure was unspecified. Thus, when examining the percentage distribution and the discussion below, caution should be used when comparing these figures to other data.

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[10] The rate of injury is calculated as the ratio of the number of lost-time claims in a category to the total number of persons employed in that category. The total number of persons employed is obtain from Labour Force Survey(LFS). Since the numerator does not originate from the same source as the denominator, readers are advised that the risk of injury as stated can at best be used only as a comparative measure.

As with age the rate of injury declined with job experience. It declined from 3.9 per100 workers for workers who had worked for their current employer for less than 6 months to a low of 1.3 for those that had worked for more than 12 months (see Table 4.1C).
Part of the explanation for these differences may lie in the fact that many seasonal or short-term jobs (e.g. in construction or forestry) are also relatively more hazardous. Also, like young workers, new workers are likely to be unfamiliar with many of the tasks required of them and are unable to recognise workplace hazards. However, it is generally the case that good occupational health and safety behaviours and practices are established through training and experience.

Table 4.1C
Injuries and Injury Rates by Job Tenure of Injured Worker
Alberta

	1998		1999	
Job Tenure	**N (%)**	**Injury Rate per 100 Workers**	**N (%)**	**Injury Rate per 100 Workers**
0 to less than 6 months	9,855 (27.4)	3.9	9,294 (26.2)	3.9
6 months to less than 1 year	3,736 (10.4)	2.4	3,309 (9.3)	2.4
1 year or more	14,268 (39.7)	1.3	15,144 (42.7)	1.3
Unspecified	8,067 (22.5)	N/A	7,693(21.7)	N/A

Occupation

As with industry sector, workplace injuries and diseases varies with occupation. Occupation is used to describe the kind of work performed by the injured worker irrespective of the kind of industry in which it is done. Injury and disease rates by specific occupations were not calculated because denominator data were not available, However, in Alberta, the top two occupations over the years with the largest number of injuries and diseases with time away from work have been truck drivers and nonconstruction labourers (see Table 4.1D). This pattern may be explained in part by the fact that these are traditionally occupations found in all industry sectors.

Table 4.1D
Injuries by Occupation of Injured Worker
Alberta

Occupations	1998		1999	
	N	%	N	%
Truck drivers	2,939	9.4%	2,813	9.8%
Labourers- non construction	2,694	8.6%	2,641	9.2%
Welders and cutters	1,397	4.4%	1,013	3.5%
Sales clerks-commodities	942	3.0%	868	3.0%
Carpenters	820	2.6%	835	2.9%
Chefs and cooks	801	2.6%	803	2.8%
Freight handlers	938	3.0%	783	2.7%
Mechanics, automobile	862	2.7%	774	2.7%
Janitors and cleaners	697	2.2%	709	2.5%
Nursing aides and orderlies	752	2.4%	669	2.3%
Shipping and receiving clerks	613	2.0%	654	2.3%
Mechanics, industrial machinery	651	2.1%	638	2.2%
Nurses-except supervisors	548	1.7%	575	2.0%
All other Occupations	21,272	59.2%	21,665	61.1%
Total	35,926	100.0%	35,440	100.0%

4.2 Nature of Injury and Disease

The nature of injury and disease is used to identify the physical characteristics of the injury and disease. In 1999, close to 90% of all the lost-time claims were traumatic injuries and disorders. Of which the four most common were sprains, strains and tears (44%); surface wounds and bruises (12%); open wounds (10%) and fractures and dislocation (9%) (see Table 4.2) A similar distribution was observed in 1998.

Males were by far, more likely than females to experience all of the four types of traumatic injuries and disorders. However, there were wide variations in their distributions. For example, males as compared to females experienced 67% of all sprains, strains and tears while, for fractures and dislocation 81% were sustained by males as against 18% by females.

Sprains, strains and tears was the most common nature of injury for each of the occupations with the largest number of claims except for chefs and cooks where open wounds, like cuts and lacerations was the most common.

The manner in which workers sustain these common severe injuries differed, suggesting that remedies to prevent such injuries need to address a variety of circumstances. Most cases of sprains, strains and tears resulted from overexertion while pulling, lifting and carrying objects. Falls and bodily reaction such as bending, reaching and twisting also resulted in a large number of sprain, strain and tears. In contrast, most of the work-related wounds (surface and open) were results of workers being struck by and/or against an object. The majority of fractures and dislocations were due to falls or worker being struck by objects.

Sprain, strain and tears was by far the most common injury in every major sector, ranging from a low of 36% in the Agriculture and Forestry sector to a high of 58% in the Public Administration, Education and Health Services sector. The Manufacturing and Processing sector had the most wounds (surface and open) while the Mining and Petroleum Development sector had the most fractures and dislocation.

Table 4.2
Nature of Injury or Disease
Alberta

Nature of Injury/Diseases	1998		1999	
	N	%	N	%
Traumatic Injuries & Disorders	32,727	91.1%	32,083	90.5%
Sprain, strain, tears	*16,821*	*46.8%*	*15,734*	*44.4%*
Surface Wounds, Bruise	*4,346*	*12.1%*	*4,142*	*11.7%*
Open Wounds	*3,855*	*10.7%*	*3,465*	*9.8%*
Fracture and dislocation	*3,679*	*10.2%*	*3,140*	*8.9%*
Burns	*1,023*	*2.8%*	*944*	*2.7%*
Other traumatic injuries & disorders	*3,003*	*8.4%*	*4,658*	*13.1%*
Systemic Diseases & Disorders	2,042	5.7%	1,867	5.3%
Nature-unknown	837	2.3%	1,232	3.5%
Multiple Disease & Disorders	130	0.4%	84	0.2%
Symptoms, Signs & ill-defined Conditions	84	0.2%	81	0.2%
Other Disease & Disorders	68	0.2%	64	0.2%
Infectious & Parasitic Diseases	26	0.1%	21	0.1%
Tumors and Cancers	12	0.0%	8	0.0%
Total	35,926	100.0%	35,440	100.0%

4.3 Part of Body Affected

The part of body variable is designed to denote the part of body directly affected by the injury or disease.

The trunk, including the back, was the most common injured body part, accounting for about 41% of total claims in 1999 (see Table 4.3). Injuries to the trunk were mostly sprain, strain and tear injuries affecting the lower back. These injuries often result from overexertion or from bodily reaction such as climbing, reaching, twisting and tripping. Most other injuries and disease were to upper extremities (25%) and lower extremities (19%).

Injuries and diseases to the upper extremities were mostly wounds (open and surface) and fractures and dislocation which were commonly caused by a worker either being caught in or compressed by equipment or being struck by or against objects. Most of the injuries and disease to lower extremities were mainly sprains, strain and tears which resulted from falls or from bodily reaction such as climbing, twisting and tripping. The least frequent body part injured were body systems like the circulatory, digestive and respiratory systems.

In all sectors the overall provincial distribution was generally observed, with injuries to the trunk comprising the majority of the lost-time claims. However, while accounting for about 19% of injuries at the provincial level, injuries and diseases to the lower extremities comprised nearly 27% of all injuries and diseases in the Agriculture and Forestry sector, the highest proportion in any sector.

Table 4.3
Part of Body Injured
Alberta

Part of Body Injured	1998 N	1998 %	1999 N	1999 %
Trunk	14,448	40.3%	14,660	41.4%
Back, including spinal cord	*10,222*	*28.5%*	*10,096*	*28.5%*
Other Trunk	*4,226*	*11.8%*	*4,564*	*12.9%*
Upper Extremities	9,354	26.0%	8,900	25.1%
Wrist(s) & hand(s)-except finger(s)	*3,389*	*9.4%*	*3,449*	*9.7%*
Finger(s)	*3,696*	*10.3%*	*3,215*	*9.1%*
Other upper extremities	*2,269*	*6.3%*	*2,236*	*6.3%*
Lower Extremities	6,738	18.8%	6,566	18.6%
Leg(s)	*3,183*	*8.9%*	*3,070*	*8.7%*
Ankle(s) & foot(feet)-not Toes	*3,075*	*8.6%*	*3,012*	*8.5%*
Other Lower Extremities	*480*	*1.3%*	*484*	*1.4%*
Head	2,577	7.2%	2,133	6.0%
Eye(s)	*1,334*	*3.7%*	*1,061*	*3.0%*
Other head	*1,243*	*3.5%*	*1,072*	*3.0%*
Multiple Body Parts	1,373	3.8%	1,980	5.6%
Neck, including Throat	1,180	3.3%	951	2.7%
Body Systems	191	0.5%	160	0.5%
Part of Body-Unknown	53	0.1%	78	0.2%
Other Body Parts	12	0.0%	12	0.0%
Total	35,926	100.0%	35,440	100.0%

4.4 Source of Injury or Disease

The source of injury or disease classification is used to describe the object or substance which the worker came into contact with and, as a result, produced an injury or disease.

No one source of injury or disease stood out in 1999, although the following two had nearly the same percentage of the case total. Self-induced bodily motion or position (15%); structures and surfaces (14%) (see Table 4.4).

All of the sources except person-other than injured worker caused more injuries or disease in males than in females.

Injuries and diseases caused by self-induced motion or position comprised mostly of stress and strains induced by the free movement of the body or its parts. This category includes cases resulting from stretching, reaching, twisting, bending, walking, climbing, running or tripping without falling. Another larger source of injuries and diseases was structures and surfaces, such as the floor or the ground. This contact is usually the result of a fall from height or a fall on the same level.

At the industry sector level, there were differences in the principal source of injury or disease. The two most common source of injury or disease in the Transportation, Communication and Utilities sector were containers such as boxes, boilers and packages (15%) and structures and surfaces like floors, ground and scaffolds (15%). In the Construction and Construction Trade Services; Mining and Petroleum Development; and Manufacturing and Processing; the most common source was parts and materials which include machines parts, tool parts and automobile parts as well as building materials, insulating materials and non-structural metal materials. Containers accounted for the most injuries in the Retail and Wholesale Trade sector, while persons other than the injured worker which include injuries inflicted by family members, co-workers and patients were the most common source of injury in the Public Administration, Education and Health Services sector. This is likely due to the prevalence of injuries suffered while moving patients in the health industries. The most common source of injuries or diseases in the Agriculture and Forestry sector was structures and surfaces.

Table 4.4
Source of Injury and Disease
Alberta

Primary Source of Injury	1998 N	1998 %	1999 N	1999 %
Persons, Plants, Animals & Minerals	7,239	20.2%	7,532	21.3%
Persons-injured or ill worker	*4,693*	*13.1%*	*5,167*	*14.6%*
Persons-other than injured worker	*1,632*	*4.5%*	*1,522*	*4.3%*
Minerals-metallic or nonmetallic	*154*	*0.4%*	*146*	*0.4%*
Other persons, plants, animals & minerals	*760*	*2.2%*	*697*	*1.9%*
Structures and Surfaces	4,943	13.8%	4,816	13.6%
Parts and Materials	4,521	12.6%	4,073	11.5%
Containers	3,788	10.5%	3,829	10.8%
Vehicles	2,584	7.2%	2,444	6.9%
Tools, Instruments & Equipment	2,480	6.9%	2,247	6.4%
Hand tools-non-powered	*1,416*	*3.9%*	*1,316*	*3.7%*
Hand tools-powered	*400*	*1.1%*	*304*	*0.9%*
Other tools, instrument and equipment	*664*	*1.8%*	*627*	*1.8%*
Machinery	2,197	6.1%	1,960	5.5%
Other Sources	1,443	4.0%	1,269	3.6%
Furniture and Fixtures	1,007	2.8%	1,028	2.9%
Chemical & Chemical Products	462	1.3%	358	1.0%
Source-Unknown	5,262	14.6%	5,884	16.6%
Total	35,926	100.0%	35,440	100.0%

4.5 Type of Event

This classification is used to describe the incident or event that occurred at the time of the exposure that directly resulted in the injury or disease. While no single descriptor is adequate for injury analysis, the event classification comes closest to providing an explanation for the occupational injury or disease.

Overexertion comprised the largest type of event for lost-time claims in 1999, making up just over 26% of total claims (see Table 4.5). Overexertion injuries were mostly sprains, strains and tears injuries which resulted from excessive physical effort in activities such as lifting, pulling, pushing objects. This event type mostly resulted in injury to the back. Being struck by or against objects and falls also accounted for about 19% and 15% of total claims respectively. Most cases of being struck by or against an object resulted in wounds (open and surface) to the hand while most of the falls resulted in sprains, strains and tears to the leg.

At the industry sector level, overexertion injuries were the most common in all sectors except Agriculture and Forestry; and Mining and Petroleum Development where being struck by or against objects were the most common types of event. While the provincial pattern was generally observed in all other sectors, specific patterns are present in certain sectors. For example, total falls comprised about 20% of claims in the Construction and Construction Trade Services sector; and Agriculture and Forestry as compared with 15% at the provincial level.

Table 4.5
Type of Event or Exposure
Alberta

	1998		1999	
	N	%	N	%
Bodily Reaction & Exertion	14,163	39.5%	14,574	41.1%
Overexertion	*9,444*	*26.3%*	*9,293*	*26.2%*
Bodily Reaction	*3,691*	*10.3%*	*3,741*	*10.6%*
Repetitive Motions	*742*	*2.1%*	*1,177*	*3.3%*
Other bodily reaction & exertion	*286*	*0.8%*	*363*	*1.0%*
Contact With Objects & Equipment	10,054	28.0%	8,969	25.3%
Struck by objects	*5,104*	*14.2%*	*4,544*	*12.8%*
Struck against objects	*2,013*	*5.6%*	*1,982*	*5.6%*
Caught in objects or equipment	*2,058*	*5.7%*	*1,863*	*5.3%*
Rubbed or abraded	*690*	*1.9%*	*504*	*1.4%*
Other contacts with object & equipment	*189*	*0.5%*	*76*	*0.2%*
Falls	5,544	15.4%	5,428	15.4%
Fall on same Level	*2,740*	*7.6%*	*2,751*	*7.8%*
Fall to Lower Level	*2,273*	*6.3%*	*1,977*	*5.6%*
Other Falls	*531*	*1.5%*	*700*	*2.0%*
Transportation Accidents	1,580	4.4%	1,523	4.3%
Exposure to Harmful substances	1,585	4.4%	1,325	3.7%
Assaults & Violent Acts	400	1.1%	396	1.1%
Assaults & violent acts by persons	*331*	*0.9%*	*321*	*0.9%*
Other assaults & violent acts	*69*	*0.2%*	*75*	*0.2%*
Fires and Explosions	83	0.2%	69	0.2%
Other Events & Exposures	1	0.0%	2	0.0%
Unknown	2,516	7.0%	3,154	8.9%
Total	35,926	100.0%	35,440	100.0%

4.6 Duration of Disability due to Injury or Disease

The duration of disability refers to the length of time, in days, for which the worker receives wage compensation from the WCB. Duration of disability is intended to reflect the severity of the effects of occupational injury and disease as reflected by the number of days off work. However, the efforts of employers to introduce modified work programs to integrate injured workers more quickly back into the workforce can have major impact on workdays lost.

Over three out of ten of total lost-time claims in 1999 resulted in five or less days lost from work while over 25% of the total claims resulted in 31 or more days lost from work. (see Table 4.6). The median days lost from work as a result of work-related injury or disease was 9 days in 1999, an increase of over 12% from that of 1998 (see Table 3.1). The total number of workdays lost after sustaining certain types of injuries or diseases varies widely. Among the major disabling injuries or disease (see Table 4.2), the median workdays lost was highest for fractures and dislocation- a median of 32 days. Also injuries to the head resulted in the shortest absence from work (median of 2 days) while injuries to the trunk, including the back resulted in the longest (median of 10 days)

For the most part, the sectors followed the provincial distribution regarding duration. However, the Agriculture and Forestry; Mining and Petroleum Development; Construction and Construction Trade Services; and Transportation, Communication and Utilities sectors all had a higher proportion of claims with 31 or more days away from work as compared to the provincial figures. In these sectors, long-term claims (31 or more days) comprised between 30%-37% of total claims. Moreover, the median days away from work varied among the sectors. It ranged from a high of 15 days for Mining and Petroleum Development to a low of 6 days for the Manufacturing and Processing sector (see Table 5.0).

Table 4.6
Duration of Disability Due to Injury or Disease
Alberta

	1998		1999	
Disability Days	**N**	**%**	**N**	**%**
1 day	4,346	12.1%	3,896	11.0%
2 days	3,220	9.0%	3,028	8.5%
3 - 5 days	6,304	17.5%	6,112	17.2%
6 - 10 days	5,123	14.3%	5,101	14.4%
11 - 20 days	4,718	13.1%	4,496	12.7%
21 - 30 days	2,506	7.0%	2,479	7.0%
31 days or more	8,758	24.4%	9,114	25.7%
Unspecified	951	2.6%	1,214	3.4%
Total	35,926	100.0%	35,440	100.0%

5. Industry Sector Summary

The risk of occupational injury and disease varies by industry sector. It is therefore important to consider injury and disease statistics by major industry sector, in order to provide a complete picture of workplace health and safety. A summary of occupation injury and disease statistics for major industry sector is presented in Table 5.0

In the sections that follow, each major sector is described in terms of composition, demographics of the injured workers in the sector and also characteristics of their injury and disease and a graph of its historical lost-time claim rate. This information would provide a framework for interpreting injury and disease rates across and within sectors.

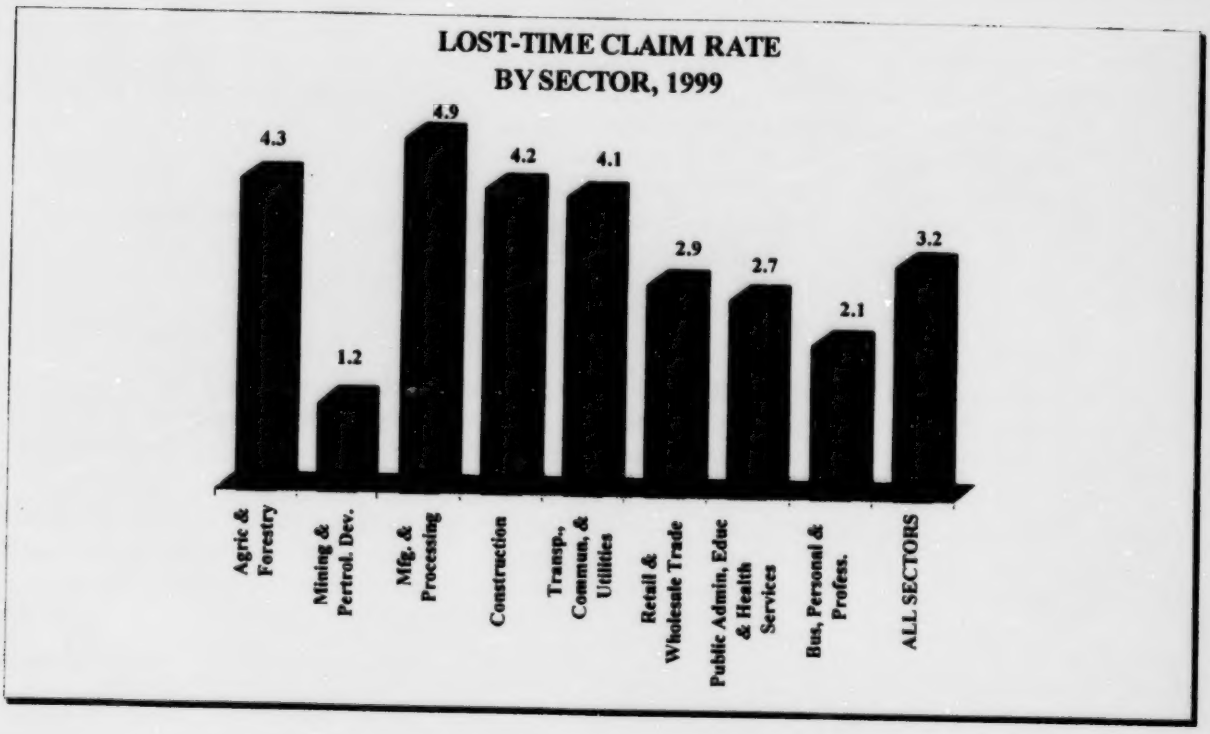
Table 5.0
Injury and Disease Statistics by Major Sector
Alberta

		1998	1999	% Change
Agriculture & Forestry	Estimated Person-Years	10,484	11,203	6.9%
	Lost-Time Claims	446	485	8.7%
	Lost-Time Claim Rate	4.3	4.3	0.0%
	Median Workdays Lost	17	14	-17.6%
	Duration Rate	189	180	-4.8%
Mining & Petroleum Development	Estimated Person-Years	84,626	74,881	-11.5%
	Lost-Time Claims	1,065	877	-17.7%
	Lost-Time Claim Rate	1.3	1.2	-7.7%
	Median Workdays Lost	14	15	7.1%
	Duration Rate	56	50	-10.7%
Manufacturing & Processing	Estimated Person-Years	156,843	152,323	-2.9%
	Lost-Time Claims	7,915	7,395	-6.6%
	Lost-Time Claim Rate	5.0	4.9	-2.0%
	Median Workdays Lost	6	6	0.0%
	Duration Rate	112	107	-4.5%
Construction & Construction Trade Services	Estimated Person-Years	141,798	145,441	2.7%
	Lost-Time Claims	6,397	6,387	-0.2%
	Lost-Time Claim Rate	4.5	4.4	-2.2%
	Median Workdays Lost	14	14	0.0%
	Duration Rate	184	178	-3.3%

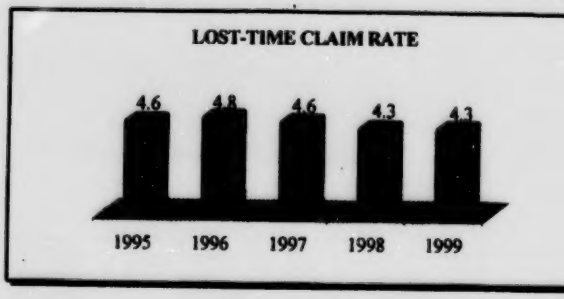
Continued...

Table 5.0 (cont.)
Injury and Disease Statistics by Major Sector
Alberta

		1998	1999	% Change
Transportation, Communication & Utilities	Estimated Person-Years	95,125	93,601	-1.6%
	Lost-Time Claims	3,871	3,803	-1.8%
	Lost-Time Claim Rate	4.1	4.1	0.0%
	Median Workdays Lost	11	11	0.0%
	Duration Rate	136	141	3.7%
Retail & Wholesale Trade Services	Estimated Person-Years	223,821	229,931	2.7%
	Lost-Time Claims	6,768	6,664	-1.5%
	Lost-Time Claim Rate	3.0	2.9	-3.3%
	Median Workdays Lost	7	7	0.0%
	Duration Rate	69	71	2.9%
Public Administration, Education & Health Services	Estimated Person-Years	199,324	201,149	0.9%
	Lost-Time Claims	5,530	5,444	-1.6%
	Lost-Time Claim Rate	2.8	2.7	-3.6%
	Median Workdays Lost	7	8	14.3%
	Duration Rate	69	68	-1.4%
Business, Personal & Professional Services	Estimated Person-Years	191,297	195,365	2.1%
	Lost-Time Claims	3,804	4,056	6.6%
	Lost-Time Claim Rate	2.0	2.1	5.0%
	Median Workdays Lost	8	8	0.0%
	Duration Rate	53	62	17.0%


LOST-TIME CLAIM RATE
BY SECTOR, 1999
4.3
1.2
4.9
4.2
4.1
2.9
2.7
2.1
3.2
Agric & Forestry
Mining & Pertrol. Dev.
Mfg. & Processing
Construction
Transp., Commun, & Utilities
Retail & Wholesale Trade
Public Admin, Educ & Health Services
Bus, Personal & Profess.
ALL SECTORS

5.1 Agriculture and Forestry



Sector Description

The Agriculture and Forestry sector includes vegetable farms, greenhouses and market gardens, mushroom farms, apiaries, commercial hatcheries, feed lots, custom harvesting and baling, timber management, logging and related woodlands operations including the trucking of logs. Secondary processing, such as sawmills and pulp mills, are included in the Manufacturing and Processing sector.

Injury and Disease Summary

In 1999, estimated person-years (estimate of employment) in Agriculture and Forestry once again rose by 6.9% from 1998. Despite this increase, the number of person-years may be an underestimation of employment in this sector as agriculture in Alberta is largely exempt from mandatory coverage with the WCB and the person-years estimates are based only on WCB covered employers. Very few dairy farms, grain farms, and ranches have WCB coverage for their workers. The number of lost-time injuries and diseases also increased by about the same percentage point resulting in no change in the lost-time claim rate of 4.3 per 100 person-years worked (see Table 5.1)

Most (77%) of the injuries and diseases involved males and although most (50%) of the claimants were between the ages 25-44 years, close to 30 % of the lost-time claims involved young workers (15-24 years). In this sector, over six out of ten injured workers had only worked for their current employer for less than six months before the injury or disease. Majority (26%) of the lost-time claimants were labourers followed by truck drivers (24%).

Sprains, strain and tears were the most common injuries in this sector followed by surface or open wounds. These were caused by either overexertion in lifting objects or by a worker being struck by objects. Injuries to the trunk, including the back was the most common (33%) body part injured in this sector. Contact with structures and surfaces were the major sources of injury in this sector. More than 35% of the injuries and diseases in this sector resulted in 31 or more days away from work. Although the median workdays lost due to injuries and disease and the duration rate for Agriculture and Forestry declined in 1999, they still remain one of the highest in the province. (see Table 5.0)

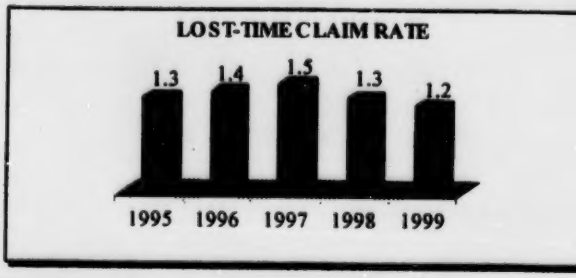
Both sub-sectors recorded a change in their estimated person-years: Agriculture (+14.7%), Forestry (-0.1%). The reduction in the duration rate for this sector may be attributed to the large change (-21%) in the duration rate of the Agriculture subsection. (see Table 5.1)

Table 5.1
Injury and Disease Statistics
Agriculture and Forestry, Alberta

Industry Sector		1998	1999	% Change
Agriculture and Forestry	Estimated Person-years	10,484	11,203	6.9%
	Lost-time Claims	446	485	8.7%
	Lost-time Claim Rate	4.3	4.3	0.0%
	Duration Rate	189	180	-4.8%

Sub-Sector		1998	1999	% Change
Agriculture	Estimated Person-years	4,920	5,642	14.7%
	Lost-time Claims	219	229	4.6%
	Lost-time Claim Rate	4.5	4.1	-8.9%
	Duration Rate	159	126	-20.8%
Forestry	Estimated Person-years	5,564	5,560	-0.1%
	Lost-time Claims	227	256	12.8%
	Lost-time Claim Rate	4.1	4.6	12.2%
	Duration Rate	215	235	9.3%

5.2 Mining and Petroleum Development



Sector Description

The Mining and Petroleum Development sector includes underground mining, open pit mining, mining and processing of oil sands, oil or gas pipeline transmission, and upstream oil and gas industries such as seismic exploration, drilling of wells, well servicing with service rigs, oilfield downhole services and upstream production. Secondary processing activities, such as oil refineries and petrochemical manufacturing, are included in the Manufacturing and Processing sector.

The composition of this sector was altered somewhat in 1999 as compared to previous years, as rathole drilling, water well drilling and procuring soil samples for testing industries were reclassified into this sector from the construction sector.

Injury and disease Summary

In 1999, both estimated person-years and lost-time claims in this sector reduced by over 10% (see Table 5.2) resulting in an 8% decrease in the lost-time claim rate from 1.3 per 100 person-years worked to 1.2 per 100 person-years worked.

Like most of the other sectors, a large proportion (95%) of injuries and diseases involved males. More than half of the injured workers had worked for their current employer for more than a year before the injury or disease. It should be noted that, in this sector, more than a third of the injured workers did not report their length of service with their current employer. The majority (25%) of the injured workers were in well drilling.

More than three out of 10 injuries or disease resulting in time away from work in this sector were sprain, strain and tears, most often involving the back. Overexertion or workers being struck by/against objects were the major events that resulted in most of the lost-time claims. The most common primary source of injury and disease in this sector were parts and materials and worker motion or position. Transportation accidents were higher in this sector than the provincial average. Although, injured workers in this sector had a longer (15) median days away from work due to injury and disease than the provincial average of 9 days, the duration rate of 50 days lost per 100 person-years worked was still well below the provincial value of 95 (see Table 5.0).

All of the sub-sectors except mining and processing of tar sands saw a reduction in their estimated person-years. The lost-time claim rate for all sub-sectors were either near or below the provincial rate. For the first time since 1994 the exploration sub-sector saw an increase in its lost-time rate. The exploration, drilling of wells, and well servicing sub-sectors continued to have high duration rates (see Table 5.2).

Table 5.2
Injury and Disease Statistics
Mining and Petroleum Development Sector

Industry Sector		1998	1999	% Change
Mining and Petroleum Development	Estimated Person-years	84,626	74,881	-11.5%
	Lost-time Claims	1,065	877	-17.7%
	Lost-time Claim Rate	1.3	1.2	-7.7%
	Duration Rate	56	50	-10.7%

Sub-Sector		1998	1999	% Change
Coal Mining	Estimated Person-years	3,161	2,995	-5.3%
	Lost-time Claims	148	104	-29.7%
	Lost-time Claim Rate	4.7	3.5	-25.5%
	Duration Rate	91	103	13.2%
Pipeline Cleaning and Transmission	Estimated Person-years	8,055	5,904	-26.7%
	Lost-time Claims	26	22	-15.4%
	Lost-time Claim Rate	0.3	0.4	33.3%
	Duration Rate	2	13	550.0%

Continued...

Table 5.2 (cont.)
Injury and Disease Statistics
Mining and Petroleum Development Sector

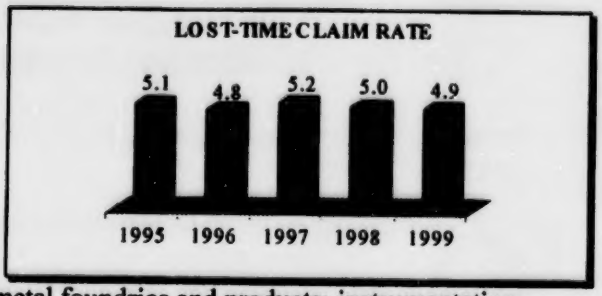
Sub-Sector		1998	1999	% Change
Petroleum Producers	Estimated Person-years	36,596	32,276	-11.8%
	Lost-time Claims	111	101	-9.0%
	Lost-time Claim Rate	0.3	0.3	0.0%
	Duration Rate	8	8	0.0%
Mine and Process of Tar Sands and Salt	Estimated Person-years	7,005	7,064	0.9%
	Lost-time Claims	32	35	9.4%
	Lost-time Claim Rate	0.5	0.5	0.0%
	Duration Rate	9	9	0.0%
Exploration	Estimated Person-years	2,711	2,224	-18.0%
	Lost-time Claims	80	74	-7.5%
	Lost-time Claim Rate	3.0	3.3	10.0%
	Duration Rate	146	215	47.3%
Drilling of Oil and Gas Wells	Estimated Person-years	6,077	5,137	-15.5%
	Lost-time Claims	182	133	-26.9%
	Lost-time Claim Rate	3.0	2.6	-13.3%
	Duration Rate	189	154	-18.5%

Continued...

Table 5.2 (cont.)
Injury and Disease Statistics
Mining and Petroleum Development Sector

Sub-Sector		1998	1999	% Change
Well Servicing with Service Rigs	Estimated Person-years	4,886	4,197	-14.1%
	Lost-time Claims	158	137	-13.3%
	Lost-time Claim Rate	3.2	3.3	3.1%
	Duration Rate	190	154	-18.9%
Oilfield Downhole Services	Estimated Person-years	12,156	11,224	-7.7%
	Lost-time Claims	223	180	-19.3%
	Lost-time Claim Rate	1.8	1.6	-11.1%
	Duration Rate	85	54	-36.5%

5.3 Manufacturing and Processing



Sector Description

The Manufacturing and Processing sector includes meat, hides and pelts; clothing and textiles; food and beverages; wood products; furniture and allied products; printing and publishing; rubber, clay and concrete products; metal foundries and products; instrumentation; and fertilizer, petrochemical and plastic products and crude oil refining.

Injury and Disease Summary

Both estimated person-years and total lost-time claims reduced in 1999 resulting in a reduction of the lost-time claim rate by 2% to 4.9 per 100 person-years from 5.0 in 1998 (see Table 5.3)

Most (61%) of the lost-time claims in this sector involved workers in the 25-44 years age group. More than half of the injured workers had been working for a year or more before the injury or disease, suggesting that many experienced workers in this sector incur lost work-time injuries. Males accounted for the majority (83%) of the lost-time claims. Welders and flame cutters experienced the largest number of injuries and disease in this sector for 1999.

Sprains, strains and tears, which were mostly caused by either overexertion in lifting/pulling objects or by a worker being struck by or against an object, were the most common injuries in this sector. Injuries to the upper extremities were the most (36%) common injured body part with injuries to the back following at a close second with 25%. The main or primary sources of injury in this sector were parts of machines or materials. Most (20%) of the lost-time claims resulted in between 3 to 5 days of work lost. This sector had the lowest (6) median workdays lost due to occupational injury and disease and a duration rate of 107 days per 100-person-years worked.

Of all the sub-sectors that had an increase in their lost-time claim rate, the manufacture of gases sub-sector had the largest increase (+33%) followed by meat, hides and pelts sub-sector (+18%). The meat, hides and pelts sub-sector also had the largest increase in person-years (+12%) and lost-time claims (+33%). Manufacture of fabricated and primary steel products and wood products continued to be the largest sub-sector in terms of person-years. The furniture and allied products; meat, hides and pelts products; and food and beverage products sub-sectors had high duration rate in the 220-140 range (see Table 5.3).

Table 5.3
Injury and Disease Statistics
Manufacturing and Processing Sector

Industry Sector		1998	1999	% Change
Manufacturing and Processing	Estimated Person-years	156,843	152,323	-2.9%
	Lost-time Claims	7,915	7,395	-6.6%
	Lost-time Claim Rate	5.0	4.9	-2.0%
	Duration Rate	112	107	-4.5%

Sub-Sector		1998	1999	% Change
Meat, Hides and Pelts	Estimated Person-years	10,754	12,077	12.3%
	Lost-time Claims	839	1,113	32.7%
	Lost-time Claim Rate	7.8	9.2	17.9%
	Duration Rate	157	170	8.3%
Clothing and Textile Products	Estimated Person-years	4,677	4,476	-4.3%
	Lost-time Claims	92	87	-5.4%
	Lost-time Claim Rate	2.0	1.9	-5.0%
	Duration Rate	52	57	9.6%

Continued...

Table 5.3 (cont.)
Injury and Disease Statistics
Manufacturing and Processing Sector

Sub-Sector		1998	1999	% Change
Food and Beverage Products	Estimated Person-years	14,412	14,777	2.5%
	Lost-time Claims	982	936	-4.7%
	Lost-time Claim Rate	6.8	6.3	-7.4%
	Duration Rate	160	140	-12.5%
Industrial Equipment	Estimated Person-years	7,187	6,945	-3.4%
	Lost-time Claims	213	171	-19.7%
	Lost-time Claim Rate	3.0	2.5	-16.7%
	Duration Rate	72	44	-38.9%
Wood Products	Estimated Person-years	23,653	23,072	-2.5%
	Lost-time Claims	1,357	1,348	-0.7%
	Lost-time Claim Rate	5.7	5.8	1.8%
	Duration Rate	125	128	2.4%
Furniture and Allied Products	Estimated Person-years	1,915	1,860	-2.9%
	Lost-time Claims	186	186	0.0%
	Lost-time Claim Rate	9.7	10.0	3.1%
	Duration Rate	311	226	-27.3%

Continued...

Table 5.3 (cont.)
Injury and Disease Statistics
Manufacturing and Processing Sector

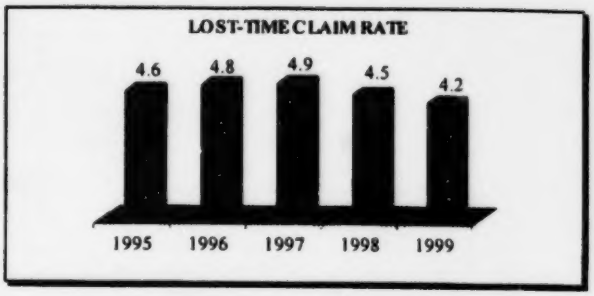
Sub-Sector		1998	1999	% Change
Printing and Publishing Products	Estimated Person-years	12,187	12,112	-0.6%
	Lost-time Claims	197	180	-8.6%
	Lost-time Claim Rate	1.6	1.5	-6.3%
	Duration Rate	35	46	31.4%
Foundries (not Steel), Rubber and Nonmetallic Mineral Products	Estimated Person-years	7,467	7,578	1.5%
	Lost-time Claims	325	340	4.6%
	Lost-time Claim Rate	4.4	4.5	2.3%
	Duration Rate	113	116	2.7%
Fabricated and Primary Metal (esp. Steel) Products	Estimated Person-years	45,419	40,662	-10.5%
	Lost-time Claims	3,045	2,322	-23.7%
	Lost-time Claim Rate	6.7	5.7	-14.9%
	Duration Rate	142	127	-10.6%
Gases, Fertilizers and Petrochemical Products-Refining & Mfg.	Estimated Person-years	11,005	9,685	-12.0%
	Lost-time Claims	62	73	17.7%
	Lost-time Claim Rate	0.6	0.8	33.3%
	Duration Rate	13	19	46.2%

Continued....

Table 5.3 (cont.)
Injury and Disease Statistics
Manufacturing and Processing Sector

Sub-Sector		1998	1999	% Change
Plastic Products	Estimated Person-years	4,232	4,609	8.9%
	Lost-time Claims	241	253	5.0%
	Lost-time Claim Rate	5.7	5.5	-3.5%
	Duration Rate	123	116	-5.7%

5.4 Construction and Construction Trade Services



Sector Description

The Construction and Construction Trade Services sector includes residential construction, industrial construction, road building, industrial labour, and specialized construction trades such as roofing, plumbing, painting, electrical wiring, and bricklaying and masonry.

The composition of this sector was altered somewhat in 1999 as compared to previous years, as rathole drilling, water well drilling and procuring soil samples for testing industries were reclassified into *Mining and Petroleum Development* sector from this sector.

Injury and Disease Summary

Estimated person-years worked in 1999 increased by 3% (see Table 5.4) from 1998. The total lost-time claims, however, reduced resulting in a decrease in the lost-time claim rate by about 2% form 4.5 to 4.4 per 100 person-years worked.

In this sector, almost all (94%) of the lost-time claims involved males. About 56% of the injured workers in this sector, with information on job experience had worked for their current employer for less than 6 months before the injury or disease. The proportion (18%) of older workers (45 +) injured on the job in this sector was far less than the provincial value of 23%. Most (13%) of the injured workers were carpenters.

Once again, sprain, strain and tears were the most common (39%) injuries in this sector. The type of event or exposure that resulted in most (21%) of the lost-time claims are either a worker was struck by an object or against an object and overexertion in lifting/pushing objects. The body part that was injured most was the trunk (39%) followed by injuries to the upper extremities with 25%. Majority (36%) of the injuries or diseases in this sector resulted in 31 or more days away from work. Although, this sector's duration rate reduced by 3%, it still had one of the highest duration rates in the province. The 1999 duration rate of 178 days per 100-person-years worked was about twice the provincial value. The median workdays lost due to injuries and disease of 14 days was also among the highest.

All the sub-sectors except residential construction, roadbuilders and scaffolders reported a growth in estimated person-years. In spite of the fact that the scaffolder sub-sector had the largest increase (+25%) in lost-time claim rate in 1999, it still had the lowest rate in this sector. The sub-sectors, except the scaffolders all had a higher duration rates. Especially high duration rates were seen in the masonry (436), roofing (445) and drywall and residential construction (156) and roadbuilders (185) sub-sectors (see Table 5.4).

Table 5.4
Injury and Disease Statistics
Construction and Construction Trade Services

Industry Sector		1998	1999	% Change
Construction and Construction Trade Service ;	Estimated Person-years	141,798	145,441	2.7%
	Lost-time Claims	6,397	6,387	-0.2%
	Lost-time Claim Rate	4.5	4.4	-2.2%
	Duration Rate	184	178	-3.3%

Sub-Sector		1998	1999	% Change
Drywall & Residential Construction	Estimated Person-years	31,631	30,597	-3.3%
	Lost-time Claims	1,681	1,649	-1.9%
	Lost-time Claim Rate	5.3	5.4	1.9%
	Duration Rate	244	262	7.4%
Glaziers	Estimated Person-years	5,565	6,278	12.8%
	Lost-time Claims	416	367	-11.8%
	Lost-time Claim Rate	7.5	5.8	-22.7%
	Duration Rate	185	137	-25.9%

Continued...

Table 5.4 (cont.)
Injury and Disease Statistics
Construction and Construction Trade Services

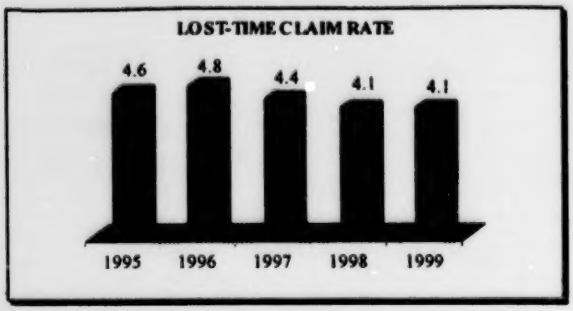
Sub-Sector		1998	1999	% Change
Industrial Construction	Estimated Person-years	26,749	32,870	22.9%
	Lost-time Claims	1,455	1,569	7.8%
	Lost-time Claim Rate	5.4	4.8	-11.1%
	Duration Rate	212	186	-12.3%
Masonry	Estimated Person-years	761	868	14.1%
	Lost-time Claims	68	88	29.4%
	Lost-time Claim Rate	8.9	10.1	13.5%
	Duration Rate	345	436	26.4%
Mechanical, Electrical and Insulation	Estimated Person-years	24,133	25,087	4.0%
	Lost-time Claims	917	1,011	10.3%
	Lost-time Claim Rate	3.8	4.0	5.3%
	Duration Rate	99	120	21.2%
Roadbuilders	Estimated Person-years	26,050	24,623	-5.5%
	Lost-time Claims	970	823	-15.2%
	Lost-time Claim Rate	3.7	3.3	-10.8%
	Duration Rate	199	185	-7.0%

Continued....

Table 5.4 (cont.)
Injury and Disease Statistics
Construction and Construction Trade Services

Sub-Sector		1998	1999	% Change
Roofers	Estimated Person-years	3,602	3,889	8.0%
	Lost-time Claims	281	281	0.0%
	Lost-time Claim Rate	7.8	7.2	-7.7%
	Duration Rate	391	445	13.8%
Scaffolders	Estimated Person-years	1,336	1,332	-0.3%
	Lost-time Claims	22	27	22.7%
	Lost-time Claim Rate	1.6	2.0	25.0%
	Duration Rate	76	64	-15.8%

5.5 Transportation, Communication and Utilities



Sector Description

The Transportation, Communication and Utilities sector consists of various modes of transportation (air, rail, truck, bus, taxi cab and limousine services), assorted methods of communication and entertainment (radio, television, movies, live theatre, telecommunications, cable vision), and utilities (electricity, natural gas, and garbage collection, recycling and disposal).

Injury and Disease Summary

Both estimated person-years in the Transportation, Communication and Utilities sector and the lost-time claims reduced by similar amount in 1999 (see Table 5.5) resulting in no reduction in the lost-time claim rate of 4.1 per 100 person-years in 1999.

Men and workers aged 25-44 years made up a large proportion of the lost-time claimants in this sector. About 3 out of 5 workers had at least one year of service with their employer when they sustained their injury or disease. Truck drivers led all occupations, accounting for 52% of the total lost-time claims.

Sprain, strain and tears was the leading (49%) nature of injury or disease in this sector. The trunk, including the back was the body part most affected by disabling work incidents in this sector followed by injuries to the lower extremities. No one source of injury or disease stood out, although, the following accounted for the same percentage (15%) of the total lost-time claims: vehicles, containers, worker position or motion and structures and surfaces. Overexertion while manoeuvring objects led all other disabling events or exposures with 26%. The sector's median workdays lost due to injury and disease of 11 days and a duration rate of 141days per 100 person-years worked was among the highest in the province, exceeded by only the Agriculture and Forestry, and Construction sectors (see Table 5.0)

The electricity sub-sector had the largest change (-17%) in estimated person-years while the natural gas sub-sector saw the largest (+50%) change in the lost-time claim rate followed by garbage collection, recycle, disposal and towing vehicles (25%). The garbage collection, recycle, disposal and towing vehicles sub-sector had the largest lost-time claim rate in 1999. Within this sector, the trucking services, and garbage collection, recycling, disposal, and towing vehicles and bus, taxi and limousine services sub-sectors had higher duration rates than the provincial value of 95 (see Table 5.5).

Table 5.5
Injury and Disease Statistics
Transportation, Communication & Utilities

Industry Sector		1998	1999	% Change
Transportation, Communication, and Utilities	Estimated Person-years	95,125	93,601	-1.6%
	Lost-time Claims	3,871	3,803	-1.8%
	Lost-time Claim Rate	4.1	4.1	0.0%
	Duration Rate	136	141	3.7%

Sub-Sector		1998	1999	% Change
Air Services	Estimated Person-years	9,938	10,443	5.1%
	Lost-time Claims	344	360	4.7%
	Lost-time Claim Rate	3.5	3.4	-2.9%
	Duration Rate	75	63	-16.0%
Rail Services	Estimated Person-years	9,498	8,853	-6.8%
	Lost-time Claims	192	193	0.5%
	Lost-time Claim Rate	2.0	2.2	10.0%
	Duration Rate	66	109	65.2%

Continued...

Table 5.5 (cont.)
Injury and Disease Statistics
Transportation, Communication & Utilities

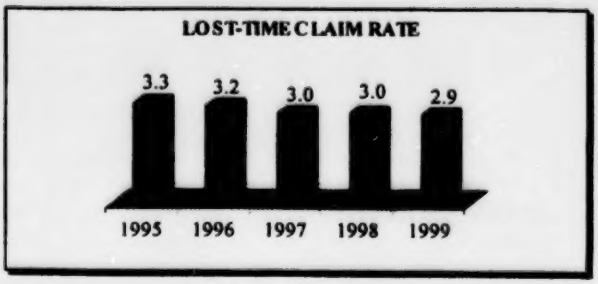
Sub-Sector		1998	1999	% Change
Trucking Services	Estimated Person-years	37,902	37,553	-0.9%
	Lost-time Claims	2,443	2,340	-4.2%
	Lost-time Claim Rate	6.4	6.2	-3.1%
	Duration Rate	251	243	-3.2%
Bus, Taxi and Limousine Services	Estimated Person-years	3,959	4,563	15.2%
	Lost-time Claims	174	158	-9.2%
	Lost-time Claim Rate	4.4	3.5	-20.5%
	Duration Rate	153	131	-14.4%
Radio, TV, Movies, Live Theatre and Ballet	Estimated Person-years	4,934	4,679	-5.2%
	Lost-time Claims	54	62	14.8%
	Lost-time Claim Rate	1.1	1.3	18.2%
	Duration Rate	30	60	100.0%
Telecommunications, Closed Circuit TV and Cablevision	Estimated Person-years	12,701	12,739	0.3%
	Lost-time Claims	123	112	-8.9%
	Lost-time Claim Rate	1.0	0.9	-10.0%
	Duration Rate	18	17	-5.6%

Continued...

Table 5.5 (cont.)
Injury and Disease Statistics
Transportation, Communication & Utilities

Sub-Sector		1998	1999	% Change
Utility-Electric	Estimated Person-years	7,137	5,914	-17.1%
	Lost-time Claims	69	68	-1.4%
	Lost-time Claim Rate	1.0	1.1	10.0%
	Duration Rate	12	15	25.0%
Utility-Natural Gas	Estimated Person-years	3,292	3,097	-5.9%
	Lost-time Claims	40	55	37.5%
	Lost-time Claim Rate	1.2	1.8	50.0%
	Duration Rate	17	30	76.5%
Garbage Collection, Recycle, Disposal and Towing Vehicles	Estimated Person-years	3,054	3,074	0.7%
	Lost-time Claims	163	204	25.2%
	Lost-time Claim Rate	5.3	6.6	24.5%
	Duration Rate	157	176	12.1%

5.6 Retail and Wholesale Trade Services



Sector Description

The Retail and Wholesale Trade Services sector includes wholesale operations, food and beverage stores, department stores, furniture and appliance stores, home improvement centres, the sale and service of automobiles, trailers, industrial and farm equipment, and office and medical equipment.

Injury and Disease Summary

Retail and Wholesale Trade Services is the largest sector in Alberta in terms of person-years (see Table 5.0). Its estimated person-years made up about 21% of the total provincial person-years in 1999.The 1999 lost-time claim rate of 2.9 per 100 person-years worked for this sector was 3% less than what it was in 1998. (see Table 5.6). The 1999 lost-time claim rate for this sector was among the lowest in the province.

This is one of the few sectors where the proportion of injured female workers was higher than the overall provincial rate. Workers aged 25-44 years and those that had worked for at least one year with current employer before the injury or disease made up a large proportion of the total lost-time claims. Commodity sales clerks made up a majority (14%) of the lost-time claimants followed by motor vehicle mechanics (10%).

Sprain, strain and tears were the leading (47%) nature of injury. The trunk, including back was the most common (43%) body part injured. Containers including boxes and crates were the leading (18%) source of injury or disease and overexertion in lifting or pushing/pulling objects was the event type or exposure that resulted in most (30%) of the lost-time claims. The median workdays lost of 7 days and the duration rate of 71 days per 100 person-years worked was still among the lowest in the province and lower than the provincial averages.

All sub-sectors saw their LTC rates either reduced or remained at the 1998 level except the food and beverage sub-sector. The food and beverage sub-sector saw a 7% increase in its lost-time claim rate. While most sub-sector's LTC rate were at or below the sector level, food and beverage stores (5.4) and yards and home improvement centres (4.8) had high lost-time claim rates. Regarding duration rates, all sub-sectors rates were at or below the provincial average except the food and beverage and yards and home improvement centres sub-sectors (see Table 5.6).

Table 5.6
Injury and Disease Statistics
Retail and Wholesale Trade Services

Industry Sector		1998	1999	% Change
Retail and Wholesale Trade Services	Estimated Person-years	223,821	229,931	2.7%
	Lost-time Claims	6,768	6,664	-1.5%
	Lost-time Claim Rate	3.0	2.9	-3.3%
	Duration Rate	69	71	2.9%

Sub-Sector		1998	1999	% Change
Wholesale Operations	Estimated Person-years	21,711	21,731	0.1%
	Lost-time Claims	482	446	-7.5%
	Lost-time Claim Rate	2.2	2.1	-4.5%
	Duration Rate	58	52	-10.3%
Food and Beverage Stores	Estimated Person-years	41,198	40,014	-2.9%
	Lost-time Claims	2,236	2,302	3.0%
	Lost-time Claim Rate	5.4	5.8	7.4%
	Duration Rate	111	132	18.9%

Continued...

Table 5.6 (cont.)
Injury and Disease Statistics
Retail and Wholesale Trade Services

Sub-Sector		1998	1999	% Change
Industrial, Farm Equipment and Products	Estimated Person-years	34,549	37,559	8.7%
	Lost-time Claims	952	787	-17.3%
	Lost-time Claim Rate	2.8	2.1	-25.0%
	Duration Rate	72	59	-18.1%
Automobiles, Sport Vehicles, Small Engines and Trailers	Estimated Person-years	37,901	36,821	-2.8%
	Lost-time Claims	1,377	1,321	-4.1%
	Lost-time Claim Rate	3.6	3.6	0.0%
	Duration Rate	87	93	6.9%
Office, Medical, and Entertainment Equipment	Estimated Person-years	15,009	16,399	9.3%
	Lost-time Claims	85	92	8.2%
	Lost-time Claim Rate	0.6	0.6	0.0%
	Duration Rate	15	21	40.0%
Yards and Home Improvement Centres	Estimated Person-years	7,799	8,373	7.4%
	Lost-time Claims	409	406	-0.7%
	Lost-time Claim Rate	5.2	4.8	-7.7%
	Duration Rate	111	101	-9.0%

Continued...

Table 5.6 (cont.)
Injury and Disease Statistics
Retail and Wholesale Trade Services

Sub-Sector		1998	1999	% Change
Other Retail Services	Estimated Person-years	65,654	69,035	5.1%
	Lost-time Claims	1,227	1,310	6.8%
	Lost-time Claim Rate	1.9	1.9	0.0%
	Duration Rate	41	43	4.9%

5.7 Public Administration, Education and Health Services

Sector Description

Public administration includes the Government of Alberta and its agencies, and all forms of local government (including cities, towns, villages and municipal districts). Education services include universities, colleges, business schools, driving schools, kindergartens, museums and libraries. Health services include health care centres, long term care facilities and home support services.

The composition of this sector was somewhat altered in 1999 as compared with previous years. Health units were reclassified into this sector from the sector listed as *Business, Personal and Professional Services.*

Injury and Disease Summary

The estimated person-years in 1999 increased by just under 1% while the total lost-time claims in Public Administration, Education and Health Services increased by about 2% (see Table 5.7) resulting in a 4% reduction in the lost-time claim rate. The 1999 lost-time claim rate of 2.7 per 100 person-years continued to be among the lowest in the province (see Table 5.0).

This is one of two sectors where majority (61%) of the lost-time claims involved females. Like all other sectors, most (58%) of the injured workers were between 25-44 years. Just over 3 out of 4 workers had at least a year of service with their employer when they sustained their injury or disease. Nurses, nursing aides and orderlies form a majority (27%) of the claimants.

Sprain, strain and tears injuries made up the largest (58%) proportion of the lost-time claims. The trunk, including the back was the most (50%) common body part injured. Most (38%) of all the injuries and diseases in this sector were caused by overexertion in manoeuvring objects. The main or primary source of injury or disease in this sector was persons other than the injured worker followed by bodily position or motion of the injured worker. While the median (8) workdays lost due to injury and disease and the duration rate (68) for this sector were below the provincial figure, *caution should be used when comparing the duration rate in this sector with the duration rates for other sectors. Due to a special arrangement involving provincial government employees, not all disability days are recorded by the WCB and, therefore, the duration rate for this sector may be underestimated.*

Health and social services; health care centres; and villages, towns, and cities sub-sectors had the higher LTC rates in the sector, exceeding both the sector and provincial rates. The Alberta government public service sub-sector had the lowest LTC rate in this sector. The duration rate of all the sub-sectors except that of Health and Social services were below the provincial rate.

Table 5.7
Injury and Disease Statistics
Public Administration, Education and Health Services

Industry Sector		1998	1999	% Change
Public Administration, Education and Health Services	Estimated Person-years	199,324	201,149	0.9%
	Lost-time Claims	5,530	5,444	-1.6%
	Lost-time Claim Rate	2.8	2.7	-3.6%
	Duration Rate	69	68	-1.4%

Sub-Sector		1998	1999	% Change
Alberta Govt. Public Services	Estimated Person-years	26,355	26,280	-0.3%
	Lost-time Claims	305	260	-14.8%
	Lost-time Claim Rate	1.2	1.0	-16.7%
	Duration Rate	30	30	0.0%
Health Care Centres	Estimated Person-years	47,333	48,143	1.7%
	Lost-time Claims	1,643	1,666	1.4%
	Lost-time Claim Rate	3.5	3.5	0.0%
	Duration Rate	91	83	-8.8%

Continued.

Table 5.7 (cont.)
Injury and Disease Statistics
Public Administration, Education and Health Services

Sub-Sector		1998	1999	% Change
Health and Social Services	Estimated Person-years	31,797	33,173	4.3%
	Lost-time Claims	1,431	1,450	1.3%
	Lost-time Claim Rate	4.5	4.4	-2.2%
	Duration Rate	138	132	-4.3%
Villages, Towns and Cities	Estimated Person-years	29,925	29,848	-0.3%
	Lost-time Claims	1,235	1,122	-9.1%
	Lost-time Claim Rate	4.1	3.8	-7.3%
	Duration Rate	72	69	-4.2%
Other Public Administration	Estimated Person-years	7,124	6,742	-5.4%
	Lost-time Claims	170	197	15.9%
	Lost-time Claim Rate	2.4	2.9	20.8%
	Duration Rate	62	79	27.4%
Education, Museums and Libraries	Estimated Person-years	56,790	56,963	0.3%
	Lost-time Claims	746	749	0.4%
	Lost-time Claim Rate	1.3	1.3	0.0%
	Duration Rate	30	35	16.7%

5.8 Business, Personal and Professional Services

Sector Description

Business, Personal and professional services sector includes building and grounds maintenance; financial, real estate and insurance services; office labour services; engineering, architectural and research services; restaurants, motels, hotels and recreation; security services; seniors lodges; and health units, private health and social services and veterinary services

The composition of this sector was altered somewhat in 1999 as compared with previous years, as Health Units was reclassified into '*Public Administration, Education and Health Services* sector

Injury and Disease Summary

Based on person-years Business, Personal and Professional Services is the second largest sector in Alberta after Retail and Wholesale Trade (see Table 5.0). The total lost-time claims rose by a percentage higher than that of the estimated person-years in 1999 resulting in a 5% increase in the lost-time claim rate from 2.0 per 100 person-years in 1998 to 2.1 in 1999. This is the only sector that saw an increase in its lost-time claim rate in 1999. Although the rate increased in 1999, the rate of 2.1 was the second lowest in the province (see Table 5.8).

This sector is only one of two where most (55%) of the lost-time claims involved females. This sector had a larger proportion (29%) of lost-time claim involving young workers (15-24 years) than the provincial value. 41% of the claimants with information on their job experience had less than 6 months of services with their current employer before their injury or disease. Majority (20%) of the lost-time claimants were chefs and cooks followed by janitors (9%). The sector's median workdays lost of 8 days and a duration rate of 62 days per 100 person-years worked were either near or below the provincial averages.

The restaurant, hotel, and recreation services continued to be the largest sub-sector. In 1999, it accounted for about 49% of total person- years in this sector. The LTC rates and duration rates of all sub-sectors were near or below the provincial rate, with the exception of the personal services-maintenance sub-sector.

Table 5.8
Injury and Disease Statistics
Business, Personal and Professional Services

Industry Sector		1998	1999	% Change
Business, Personal and Professional Services	Estimated Person-years	191,297	195,365	2.1%
	Lost-time Claims	3,804	4,056	6.6%
	Lost-time Claim Rate	2.0	2.1	5.0%
	Duration Rate	53	62	17.0%

Sub-Sector		1998	1999	% Change
Animal Care Services	Estimated Person-years	1,201	1,436	19.5%
	Lost-time Claims	36	36	0.0%
	Lost-time Claim Rate	3.0	2.5	-16.7%
	Duration Rate	83	68	-18.1%
Private Health Services and Seniors' Accommodations	Estimated Person-years	8,680	9,400	8.3%
	Lost-time Claims	174	191	9.8%
	Lost-time Claim Rate	2.0	2.0	0.0%
	Duration Rate	50	60	20.0%

Continued...

Table 5.8 (cont.)
Injury and Disease Statistics
Business, Personal and Professional Services

Sub-Sector		1998	1999	% Change
Building and Grounds Maintenance	Estimated Person-years	11,986	12,761	6.5%
	Lost-time Claims	244	284	16.4%
	Lost-time Claim Rate	2.0	2.2	10.0%
	Duration Rate	49	75	53.1%
Personal Services-Maintenance	Estimated Person-years	10,774	10,317	-4.2%
	Lost-time Claims	372	413	11.0%
	Lost-time Claim Rate	3.5	4.0	14.3%
	Duration Rate	129	174	34.9%
Engineering, Architectural, Designing and Research Services	Estimated Person-years	23,968	23,781	-0.8%
	Lost-time Claims	85	68	-20.0%
	Lost-time Claim Rate	0.4	0.3	-25.0%
	Duration Rate	9	9	0.0%
Restaurants, Hotels and Recreation Services	Estimated Person-years	93,474	95,967	2.7%
	Lost-time Claims	2,398	2,528	5.4%
	Lost-time Claim Rate	2.6	2.6	0.0%
	Duration Rate	63	69	9.5%

Continued...

Table 5.8 (cont.)
Injury and Disease Statistics
Business, Personal and Professional Services

Sub-Sector		1998	1999	% Change
Other Personal Services	Estimated Person-years	9,921	11,007	10.9%
	Lost-time Claims	154	183	18.8%
	Lost-time Claim Rate	1.6	1.7	6.2%
	Duration Rate	46	55	19.6%

6. WCB Accepted Occupational Fatalities

A WCB accepted occupational fatality is defined as the death of a worker resulting from a work-related incident or exposure and which has been accepted by the WCB for compensation. Some of the fatalities accepted in a particular year occurred in prior years (see Table 6.1B).
This section provides a description of the occupational fatalities as well as the provincial fatality rates and rates in the major industry sectors.

6.1 Description of Fatalities Accepted by the WCB

In 1999, the WCB-Alberta accepted 114 occupational fatalities for compensation, an increase of about 9% from that of 1998. This is the second highest number of fatalities accepted over the last five years. About 33% of the fatalities accepted in 1999 were occupational disease cases that resulted from incidents or exposures from prior years.

Alberta Human Resources and Employment classifies occupational fatalities into three general event types:

- motor vehicle incidents;
- workplace incidents; and
- occupational disease.

Each of the types is described in more detail below.

Motor Vehicle Incidents

Motor vehicle incidents typically involve non-industrial vehicles operating on public roads in which the fatally injured worker was either the driver or a passenger. This type of occupational fatality also includes cases involving aircraft crashes, train crashes, helicopter crashes and water vehicle crashes. About 29% of the fatalities accepted in 1999 were motor vehicle incidents, a decrease of about 6% from 1998 (see Table 6.1A).

Workplace Incidents

Workplace incidents consist of cases in which the worker dies at a work site or as a result of injuries sustained at a work site. This is the type of fatality that Alberta Human Resources and Employment typically investigates. The proportion of workplace incidents accepted by the WCB increased to 38% in 1999 from 32% in 1998 (see Table.6.1A).

Occupational Disease

Occupational disease fatalities consist mostly of recognised occupational disease, that is, disease known to be primarily or exclusively work-related (e.g. asbestosis, black lung disease). Occupational diseases are frequently diagnosed many years after the initial or crucial exposure to the toxic substance, and in such cases it is very difficult to determine when the fatal exposure occurred. *The occupational disease category, therefore, should not be interpreted to reflect present work site hazardous conditions or exposures.*

This category also includes heart attacks suffered on the job.
The most frequent occupational disease fatalities accepted by the WCB in recent years concern exposure to asbestos fibres. In 1999, 33% of the total fatalities accepted resulted from occupational disease (see Table 6.1A).

Table 6.1A
Description of Fatalities Accepted
By the Workers Compensation Board
Alberta, 1991-1999

	Motor Vehicle Incident		Workplace Incident		Occupational Disease		Total	
Year	N	%	N	%	N	%	N	%
1991	25	29.1	33	38.4	28	32.6	86	100.0
1992	29	29.3	43	43.4	27	27.3	99	100.0
1993	28	36.4	30	39.0	19	24.7	77	100.0
1994	30	40.5	28	37.8	16	21.6	74	100.0
1995	42	45.2	29	31.2	22	23.7	93	100.0
1996	33	36.3	34	37.4	24	26.4	91	100.0
1997	49	40.8	37	30.8	34	28.3	120	100.0
1998	37	35.2	34	32.4	34	32.4	105	100.0
1999	33	28.9	43	37.7	38	33.3	114	100.0
Total	306	35.6	311	36.2	242	28.2	859	100.0

Table 6.1B
Fatal Claims Accepted by Category of Injury or Disease
Alberta: 1995-1999

	Year Accepted					
Category of Injury/Disease	1995	1996	1997	1998	1999	Total
Injury-Death and Incident Occurred in Same Year[11]	68	63	82	59	70	342
Injury-Incident Occurred Prior to Year of Death	4	4	4	12	6	30
Asbestos Exposure	16	12	24	26	31	109
Other Disease	5	12	10	8	7	42
Total	93	91	120	105	114	523

6.2 Occupational Fatality Rates in Industry Sectors

The estimated occupational fatality rate for the province in 1999 was 103 deaths per million person-years worked. (see Table 6.2A), an increase of 8% from 1998. *It should be noted that, unlike the LTC rate, the fatality rate is not a reliable indicator of the present risk of work-related injury and disease since conditions that resulted in the exposure or disease may not be present now.*

Like injury rates, fatality rates vary across industry sectors due to the different types of work activity performed in the various sectors. In order to reduce year-to-year variations, the period 1991 to 1999 was used to calculated the fatality rates for a sector by dividing the total number of accepted fatalities in a sector for the period 1991 to 1999 by the total number of person-years worked during that period. The fatality rates for the period considered was greatest in the Agriculture and Forestry sector (see Table 6.2B). The estimated rate of 294 per million person-years worked is about three times the provincial rate for the same period. Construction and Construction Trade Services; Transportation, Communication and Utilities; and Mining and Petroleum Development sectors all had high risk of occupational fatality. Fatality rates were lower than the provincial rate in the relatively less hazardous industry sectors of Public Administration, Education and Health Services; Retail and Wholesale Trade Services; Business, Personal and Professional Services; and Manufacturing and Processing sector (see Table 6.2B).

Caution should be used in considering the fatality rate for Agriculture and Forestry since most of the industries in this sector do not have workers compensation coverage, resulting in the under-estimation of the person-years worked and accepted fatalities. The high fatality rate may imply the sector is more hazardous, when in fact it may not be.
The fatality rates reported may be more reliable for sectors where most of the industries have

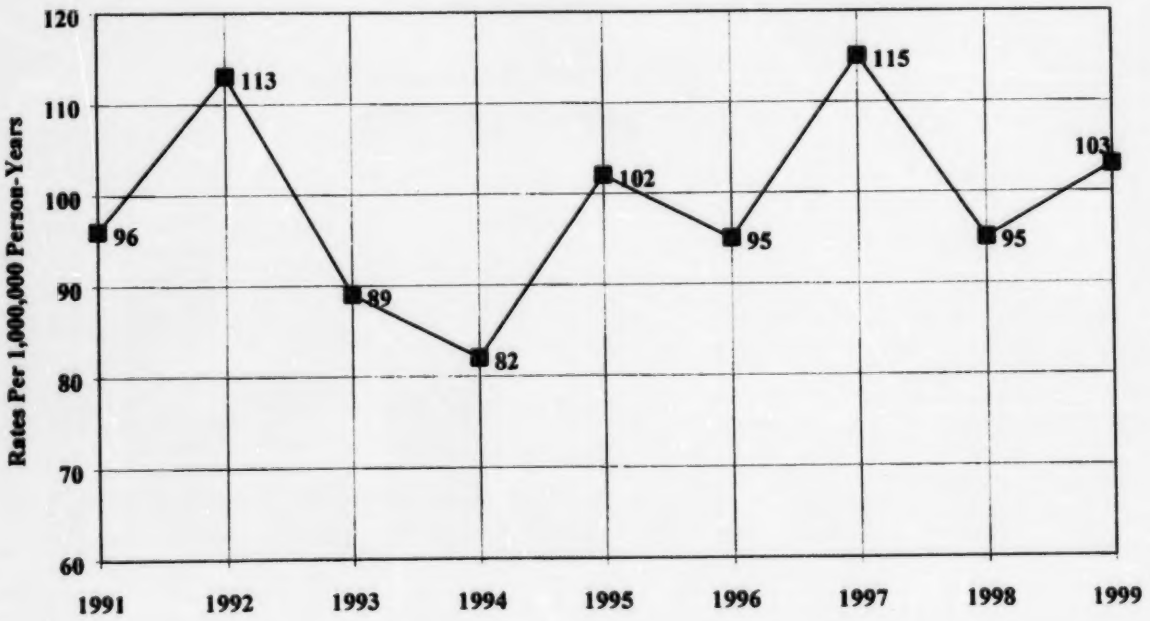
[11] There were 70 fatal claims accepted in 1999 in which the death and incident occurred in the same year. For some of the 70 cases the death occurred prior to 1999. The numbers for the other years are on the same basis.

workers compensation coverage since the data only includes these workers.

Table 6.2A
Occupational Fatality Rates[12]
Alberta: 1991-1999

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
Accepted Fatalities	86	99	77	74	93	91	120	105	114	560
Estimated Fatality Rate	96	113	89	82	102	95	115	95	103	97

Occupational Fatality Rates
Alberta: 1991-1999



[12] Fatality rates are expressed as fatalities per million person-years worked. Estimates are based upon information provided by Alberta WCB. Fatalities occurring under Government of Canada jurisdiction are excluded from the calculation of the fatality rates.

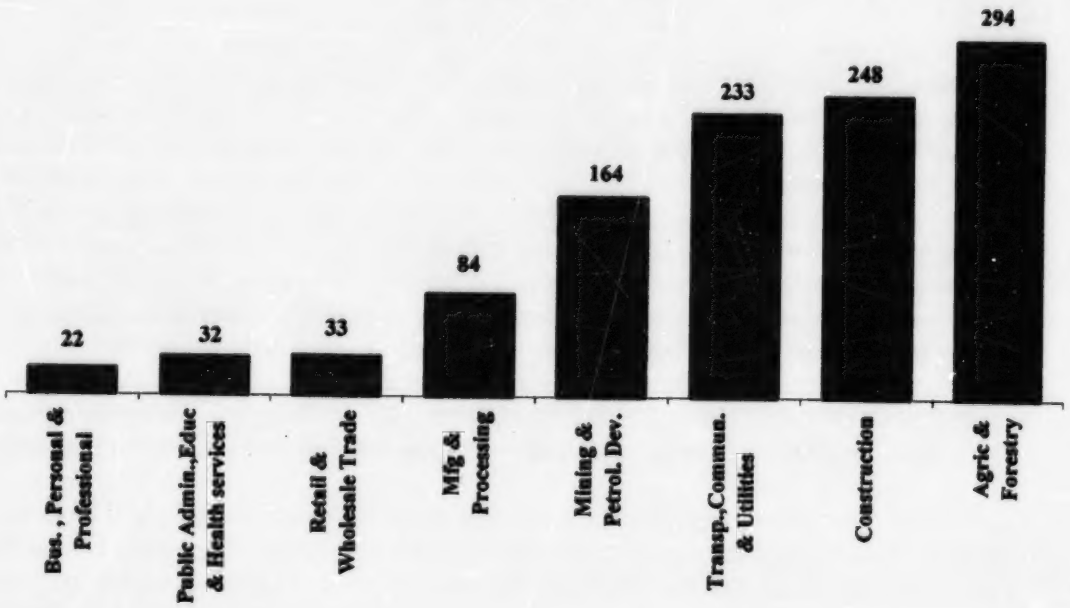
Table 6.2B
Occupational Fatality Rates[13] By Industry Sector
Alberta: 1991-1999

Industry Sector (1991-1999)	Agriculture & Forestry	Mining and Petroleum Development	Manufacturing & Processing	Construction & Construction Trade
Total Fatalities	23	112	98	242
Fatality Rate	294	164	84	248

Continued...

Industry Sector (1991-1999)	Transportation, Communication & Utilities	Retail & Wholesale Trade	Public Administration, Education & Health Services	Business, Personal & Professional Services
Total Fatalities	165	59	57	32
Fatality Rate	233	33	32	22

Fatality Rates By Industry Sector
Alberta: 1991-1999



[13] Fatality rates are expressed as fatalities per million person-years worked. Estimates are based upon information provided by Alberta WCB. Fatalities occurring under Government of Canada jurisdiction are excluded from the calculation of the fatality rates.

References

Alberta Human Resources and Employment: *1998 Summary: Lost-Time Claims and Claim Rates*

Human Resources Development Canada: *Occupational Injuries and Their Cost in Canada, 1993-1997p, Ottawa, Canada*

Statistics Canada: *Labour Force Historical Review, CD-ROM No. 71-F-0004-XCB, Canada 1999*

APPENDIX A
TERMS, DEFINITIONS AND FORMULAS

Appendix A: Terms, Definitions, and Formulas

Lost-Time Claim

A lost-time claim (LTC) is a claim for an occupational injury or disease, which disables the worker beyond the day of injury. Included are claims for which wages compensation are paid, permanent disability claims, fatalities, and cases in which the injured worker is assigned light duties or other modified work.

Person-Years

Person-year estimates are calculated from wage and payroll data provided by account holders to the WCB. Alberta Labour uses these data to estimate an average industry wage, and uses the average industry wage and employer payroll data to estimate person-years foe each employer and each industry. One person-year is equivalent to one full-time worker working for one year, and can be assumed to equal 2,000 hours worked.

LTC Rate

The lost-time claim (LTC) rate is calculated by dividing the number of lost-time claims by the person-year estimate, and multiplying the result by 100. The LTC rate represents the probability or risk of disabling injury or disease to a worker during a period of one-year work. Comparisons of LTC rates between industries, or between years, can be used to indicate increases, decreases, or differences in this risk.

$$\text{LTC Rate} = \frac{\text{Number of LTCs X 100}}{\text{Estimated Person-years}}$$

Duration (Days Lost)

The duration of disability is the number of days following the injury or disease for which the worker was disabled, and unable to perform normal work duties. This information is obtained for this report from data on compensation days paid on each claim from WCB. Alberta Labour obtains these data on March 31 of the year following the claim year, and does not update the information, even though many injured workers continue to be disabled beyond this date. As a result, the duration information reported here underestimates the true impact of lost-time injury and disease.

Duration Rate

The duration rate is calculated by dividing the number of workdays lost (disability days) by the person-year estimate, and multiplying by 100. The result is expressed as "days lost per 100 person-years worked", and indicates, in part, the economic impact of occupational injury and disease. Duration rates are not recommended as reliable indicators of full economic cost. In addition, readers are warned that duration rates are highly unstable when based on only a few lost-time claims; it is recommended that the duration rate not be calculated based upon fewer than 30 lost-time claims.

$$\text{Duration Rate} = \frac{\text{Disability Days X 100}}{\text{Estimated Person-Years}}$$

Industry Coverage This report includes all industry activity in Alberta covered by the Alberta WCB for occupational injury and disease to workers. Most industry sector are included but notable exceptions include agriculture and finance. Several professional groups (e.g. the teaching and medical professions) are also excluded. Government of Canada is excluded except where the WCB pays administration or enhanced disability cost. Claims from the Government of Alberta employees are only included if the duration is longer than 80 days. About 75% of employed persons in Alberta are represented in this report.

WCB Accepted Fatality An occupational fatality is the death of a worker which resulted from a work-related incident or exposure and which has been accepted by the WCB for compensation. A fatality is counted in the year it is accepted.

Fatality Rate The fatality rate is calculated by dividing the number of accepted fatalities by the person-years estimate and multiplying the result by one million. The result is expressed as "fatalities per million person-years worked ". Government of Canada fatalities are excluded before the calculation of the fatality rate.

$$\text{Fatality Rate} = \frac{\text{Number of fatalities} \times 1{,}000{,}000}{\text{Estimated Person-years}}$$

NEC Means Not Elsewhere Classified

UNS Means Unspecified

APPENDIX B
WCB INDUSTRY CODES

Appendix B: - 1999 Sector Codes[14]

1. Agriculture & Forestry

Industry Codes: 01100,01300, 01700, 01900, 01901, 01903, 02102, 02109, 02110,03100, 03902, 04100, 60201, 62908, 85902

Sub-sector Codes:

Sub-sector	Industry
Agriculture	01100, 01300, 01501, 01700, 01900,01901, 01903, 02102,02109, 02110, 04100, 60201, 62908, 85902
Forestry	03100, 03902

2. Mining & Petroleum Development

Industry Codes: 06100,06110,06111,06300,06305,06501,06600,06601, 07700,09200,09201,09600,09902,09903,09904,09911, 09915,09921,42103,42130,42150,51500,51501,73702

Sub-sector Codes:

Sub-sector	Industry
Coal Mining	06100, 06110, 06111
Pipeline Cleaning and Transmission	51500, 51501
Petroleum Producers	06300
Mine/Process Tar Sands & Salt	06600, 07700
Exploration	09200, 09201
Drilling of Wells	09600
Well Servicing with Service Rigs	09903
Oilfield Downhole Services	09911

[14] Codes are Workers' Compensation Board industry codes

3 Manufacturing & Processing

Industry Codes: 01103, 02101, 02112, 07900, 08701, 10100, 10104, 10500, 11202, 12301, 12304, 12400, 12900, 13100, 13101, 13300, 13500, 13900, 13904, 13905, 14100, 14300, 14500, 16900, 16901, 16902, 17200, 17900, 17901, 21300, 22101, 22900, 22901, 24900, 25100, 25401, 25900, 25901, 26101, 26104, 26401, 27102, 27103, 27200, 27300, 27402, 28600, 28603, 28800, 28900, 29100, 29102, 29200, 29600, 29700, 30100, 30101, 30403, 30407, 30412, 30700, 30801, 33500, 33602, 33606, 33900, 33902, 34100, 34101, 34300, 34500, 34700, 34702, 34800, 35200, 35401, 36500, 37201, 37301, 37402, 37801, 37805, 38100, 38200, 38201, 38500, 39300 39701, 39901, 62304, 62500, 69903, 86201, 86202, 89301,89401, 89916

Sub-sector Codes:

Sub-sector	Industry
Meat, Hides, and Pelt Products	01103, 10100, 10104, 17200
Clothing and Textile Products	17900, 21300, 22900, 22901, 24900
Food and Beverage Products	02101, 02112, 10500, 11202, 12301, 12400, 12900, 13100, 13101, 13300, 13500, 13900, 13904, 13905, 14100, 14300, 14500, 37402
Wood Products	25100, 25401, 25900, 25901, 27102, 27103
Furniture and Allied Products	26101, 26104
Printing and Publishing Products	27402, 28600, 28800, 28900, 86202, 89301
Foundries(not Steel), Rubber, and Non-metallic Products	08701, 16901, 27200, 34100, 34101, 34300, 34500, 35200, 35401, 29700, 34700, 34702, 38500, 34800
Fabricated and Primary Metal (esp. Steel) Products	29102, 29100, 29200, 26401, 30100, 30101, 30407, 33606, 89401, 30412, 30700, 33602, 30403, 30801, 62500
Industrial Equipment	16902, 38100,62304
Gases, Fertiliser, and Petrochemical-Refining & Mfg,	36500, 37201, 37801, 37805
Plastic Products	37301

4. Construction & Construction Trade Services

Industry Codes: 01904, 01905, 02100, 02103, 02105, 02200, 06304, 06306, 09927, 30302, 31501, 31507, 31508, 35301, 40400, 40401, 40602, 40604, 40901, 40905, 40907, 42102, 42104, 42105, 42106, 42109, 42110, 42111, 42113, 42115, 42117, 42118, 42120, 42121, 42122, 42124, 42125, 42127, 42128, 42129, 42131, 42133, 42135, 42136, 42139, 42141, 42144, 42151, 42156, 42158, 42159, 42160, 42161, 42184, 51502, 51503, 51504, 51506, 62700, 86401, 86413, 86911, 86922, 89600, 89605, 89928

Sub-sector Codes:

Sub-sector	Industry
Drywall/Residential Construction	02100, 40401, 42111, 42113, 42115, 42125, 42133, 42135, 42136, 42141
Glaziers	30302, 42121
Industrial Construction	40400, 42104, 42105, 42106, 42109, 42120, 42127, 42156, 42159, 42161, 51504, 86911, 89401, 89605
Masonry	42102
Mechanical, Electrical and Insulation	31508, 42110, 42117, 42122, 42124, 42144, 42184, 89600
Roadbuilders	40602, 40604, 40905
Roofers	42118, 42139, 42151
Scaffolders	89928

5. Transportation, Communication & Utilities

Industry Codes: 27400, 42155, 50100, 50104, 50105, 50106, 50107, 50200, 50201, 50203, 50607, 50701, 50714, 50720, 50800, 50801, 50802, 51200, 51705, 52700, 54300, 54301, 54501, 57200, 57400, 57901, 65402, 85100, 85907, 85914, 85918, 85934

Sub-sector Codes:

Sub-sector	Industry
Transportation Sub-sectors	
Air Services	50100, 50104, 50105, 50106, 50107, 50200 50201, 50203
Rail Services	50607
Trucking Services	42155, 50701, 50714, 50720
Bus, Taxi, and Limousine Services	50800, 50801, 50802, 51200
Communications/Entertainment Sub-sectors.	
Radio, TV, Movies Live Theatre and Ballet	54300, 85100, 85907, 85914, 85918, 85934
Telecommunication, Closed Circuit TV, and Cable Vision	54501, 54301
Utilities Sub-sectors	
Utilities-Electric	57200
Utilities-Natural Gas	57400
Garbage Collection, Recycle, Disposal and Towing Services	27400, 57901, 65402

6. Retail & Wholesale Services

Industry Codes: 16300, 25403, 33901, 37902, 52400, 60800, 62200, 62201, 62300, 62302, 62303, 62701, 62900, 62903,63100, 63103, 63105, 64200, 65400, 65406, 65600, 65800, 65808, 65809, 66300, 66900, 67300, 67601, 67602, 67604, 67802, 68100, 69100, 69200, 69300, 69301, 69500, 69901, 69904, 69912, 69914, 69915, 69916, 86905, 86909, 89100, 89908, 89910, 89922

Sub-sector Codes:

Sub-sector	Industry
Wholesale Operations	62900
Food and Beverage Stores	63100, 63103, 63105, 65406, 69916
Industrial and Farm Equipment and Products	52400, 60800, 62200, 62201, 62302, 62303, 69300, 89910, 86905, 37902
Automobiles, Sport Vehicles, Small engines, and Trailers	16300, 62701, 65400, 69912, 69915, 89922, 65600, 65800, 65808, 65809
Office, Medical, and Entertainment Equipment	33901, 62300, 67602
Yard and Home Improvement Centres	25403, 69301
Other Retail Services	62903, 66300, 66900, 68100, 69100, 69500, 69904, 89100, 64200, 67300, 67601, 67604, 67802, 69200, 69901, 69914, 86909

7. Public Administration, Education & Health Services

Industry Codes: 36502, 57601, 57602, 80102, 80103, 80105, 80106, 80301, 80302, 80305, 80311, 80500, 80700, 80701, 82100, 82704, 82705, 82710, 82712, 82801, 82806, 82808, 82812, 85909, 86927, 86930, 89923, 89925, 93200, 93201, 93202, 95100, 95101, 95102, 95104, 95105, 95108

Sub-sector Codes:

Sub-sector	Industry
Public Administration Sub-sector.	
Alberta Govt Public Services	93200, 93201, 93202
Villages, Towns, and Cities	95100, 95101, 95104
Other Public Administration	36502, 57601, 57602, 82712, 86930, 95102, 95105, 95108
Education Services Sub-sectors	
Education, Museums, and Libraries	80102, 80103, 80105, 80106, 80301, 80302, 80305, 80311, 80500, 80700, 80701, 86927, 89923
Health Services Sub-sectors.	
Health Care Centres	82100, 82705
Health and Social Services	82704, 82710, 82801, 82806, 82808, 82812, 85909, 89925

8. Business, Personal & Professional Services

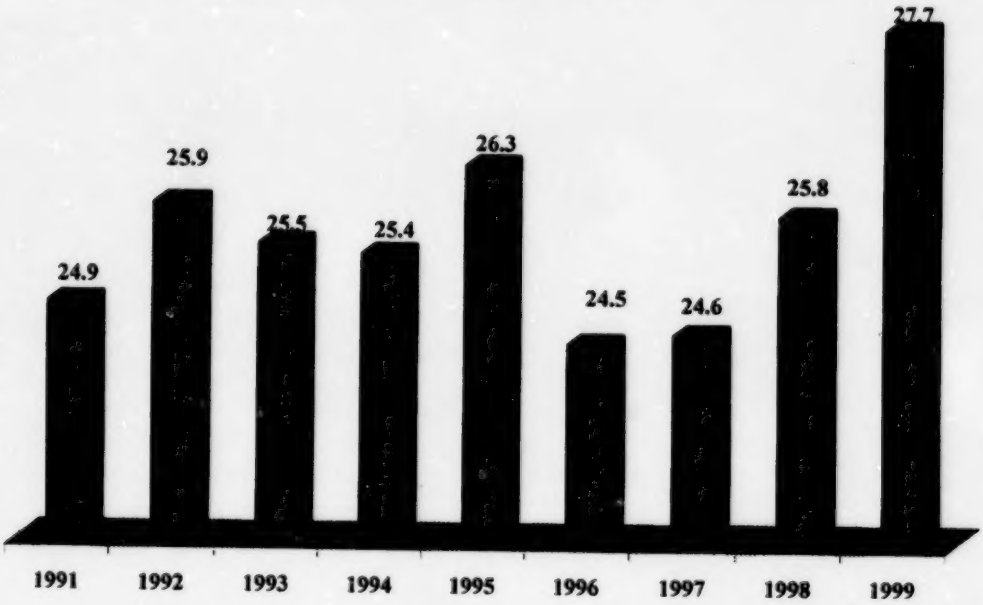
Industry Codes: 02104, 02116, 02117, 09900, 37401, 38101, 38102, 51701, 51902, 52705, 62904, 70200, 73500, 73501, 80703, 82500, 82700, 82701, 82703, 82800, 83100, 85300, 85900, 85901, 85904, 85916, 85919, 85922, 85925, 86200, 86400, 86403, 86405, 86408, 86409, 86410, 86411, 86414, 86600, 86901, 86902, 86906, 86907, 86913, 86918, 86920, 86921, 86923, 87200, 87300, 87301, 87400, 87401, 87402, 87500, 87501, 87502, 87503, 87505, 87508, 87510, 87600, 87603, 87700, 87900, 89101, 89104, 89701, 89702, 89703, 89704, 89705, 89901, 89902, 89907, 89913, 89924, 89927, 93109, 93113

Sub-sector Codes:

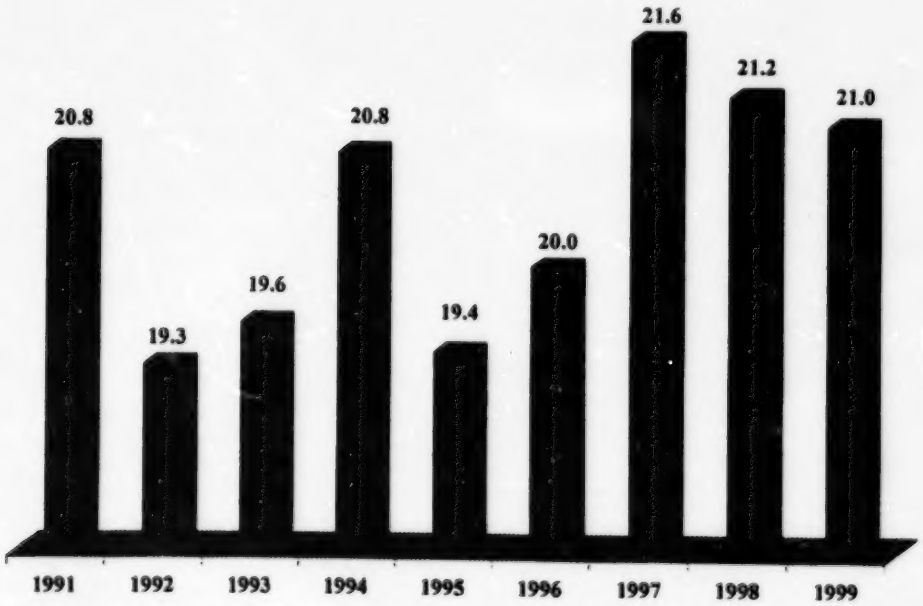
Sub-sector	Industry
Business Services Sub-sectors...	
Building and Ground Maintenance	87500, 87510, 89702
Engineering, Architectural, Designing and Research Services	09900, 86400, 86403, 86405, 86408, 86409, 86410, 86411, 86414, 86913, 86923, 89927
Personal Services Sub-sectors...	87300, 87301, 89701, 89703, 89704, 89705
Personal Services-Maintenance	51902, 85900, 85904, 87501, 87502,87503,
Restaurant, Hotel, and Recreation Services	87600, 87603, 51701, 80703, 85300, 85901, 85916, 85919, 85922, 85929, 87508, 89901, 89907
Other Personal Services	87200, 87400, 87401, 87402, 83100, 87700, 87900
Professional Services Sub-sectors...	
Animal Care Services	02104, 02116, 02117
Private Health Services & Seniors' Accommodations	37401, 38101, 38102, 82500, 82700, 82701, 82703, 82800

APPENDIX C
SELECTED GRAPHS

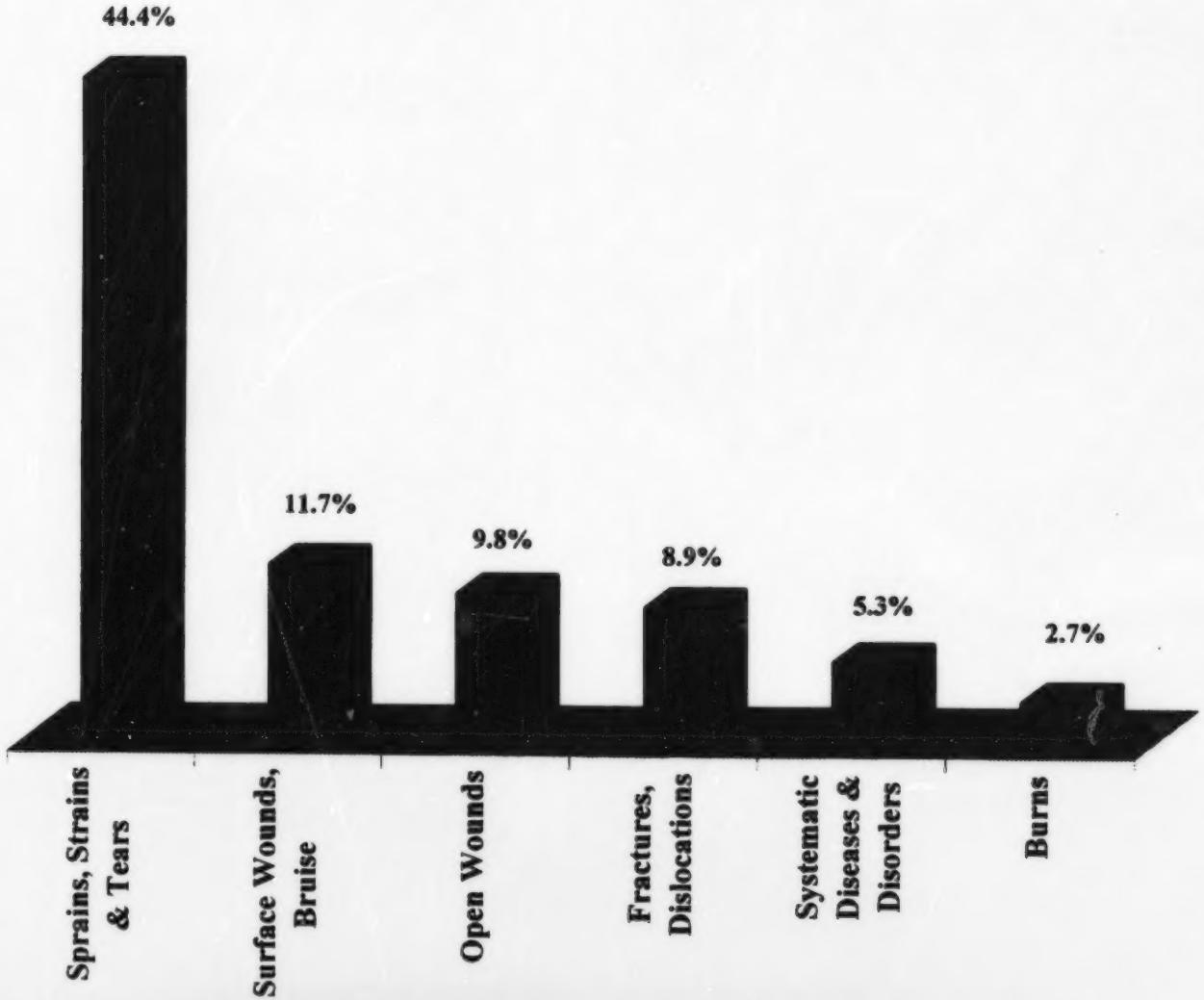
Proportion of Lost-Time Claimants Who Are Women
Alberta: 1991-1999



Proportion of Lost-Time Claimants Who Are Young
Alberta:1991-199

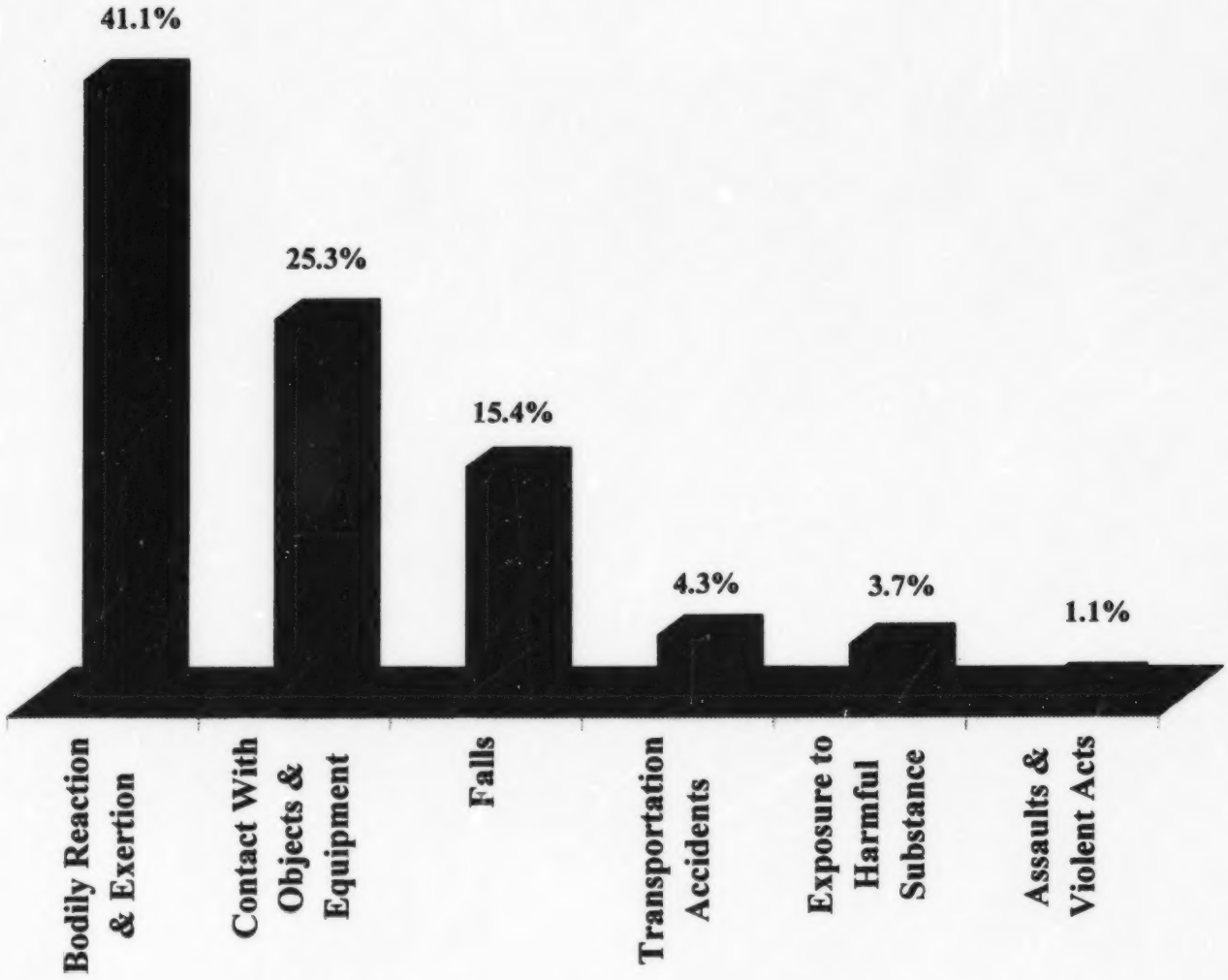


LOST-TIME CLAIMS BY COMMON PHYSICAL CHARACTERISTICS OF INJURED WORKER
Alberta, 1999

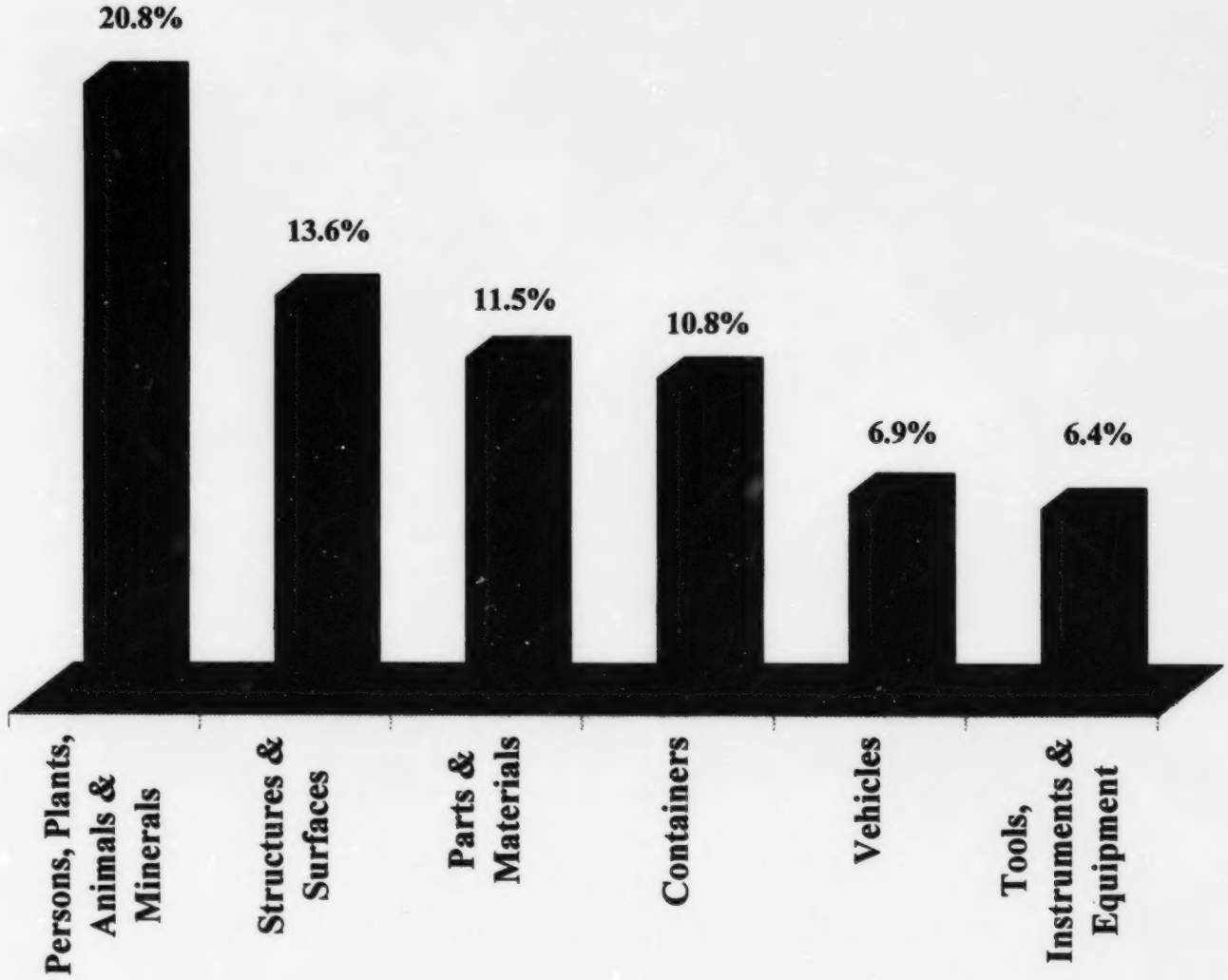


Performance, Evaluation and Information Services. June, 2000

LOST-TIME CLAIMS BY COMMON TYPE OF EVENT OR EXPOSURE
Alberta, 1999



LOST-TIME CLAIMS BY COMMON SOURCE OF INJURY OR DISEASE
Alberta, 1999



LOST-TIME CLAIMS BY COMMON PART OF BODY INJURED
Alberta, 1999